

# EAGLE TUGS



## Parts and Service Manual



**Vehicle Types:** TT-10 & TT-12

**Engine Type:** Yanmar Turbo Diesel 4TNV98T Tier II & Tier III Engine Models

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# INTRODUCTION

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From everyone at Eagle Tugs, we would like to say Thank You for purchasing an Eagle TT-series tow tractor. We take a lot of pride in the quality of the products that we build, as well as our continued customer service. Our goal is to build a long term relationship with our customers. We want you, the customer, to be 100% satisfied with your Eagle experience. To us, this means that your Eagle TT-series tractor is functionally superior to any other products you have used. This also means that your Eagle product is continually supported in a professional, timely manner.

## PURPOSE & USE OF THIS MANUAL

This manual is designed as a reference guide to make the reader more familiar with the components of the Eagle TT-10 and TT-12 tow tractor models. This manual includes part numbers and descriptions to assist the reader in ordering component spare/service parts. The manual also outlines the Scheduled Maintenance Intervals recommended by Eagle in order to keep your vehicle running properly. In this manual you will also find the Eagle Standard Warranty on all of the TT-series tow tractors. However, for more detailed information on the Eagle Warranty and procedure, as well as information pertaining to the safe operation of your Eagle product, please see the Eagle Operations Manual that was also included with your vehicle.

## TECHNICAL ASSISTANCE

When addressing a repair procedure or operational problem, please remember that Eagle technical support is only a phone call away. Eagle technicians are available to assist you in vehicle diagnostics and recommended repair procedures. We encourage you to use this service to reduce machine down-time and to gain a better understanding of proper repair procedures.

## ORDERING SPARE/SERVICE PARTS

Eagle inventories most of the component parts found in its TT-series tow tractors, and most spare/service parts can be shipped the same day the order is received. Parts orders need to be received at Eagle by 12:00 pm (Noon) EST in order for the parts to be shipped that same day. Parts ordered after 12:00 pm EST will most likely be shipped the following day.

**NOTE: PLEASE CHECK OUR WEBSITE PERIODICALLY FOR MANUAL UPDATES AS WELL AS SERVICE BULLETINS.**

### Eagle Corporate Office

26111 Northline Rd

Taylor, MI 48180

(800) 671-0431

[www.eagletugs.com](http://www.eagletugs.com)

### Customer Service

[customerservice@eagletugs.com](mailto:customerservice@eagletugs.com)

(734) 442-1000 -- (800) 671-0431

### Parts & Service

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# WARRANTY

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## VEHICLE ID INFORMATION

This information can be found on the tractor's I.D. Plate located on the firewall next to the driver's seat. Additionally, there is a permanent serial number located on the rear bulkhead inside the engine compartment.

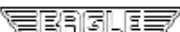
MODEL \_\_\_\_\_

SERIAL NO \_\_\_\_\_

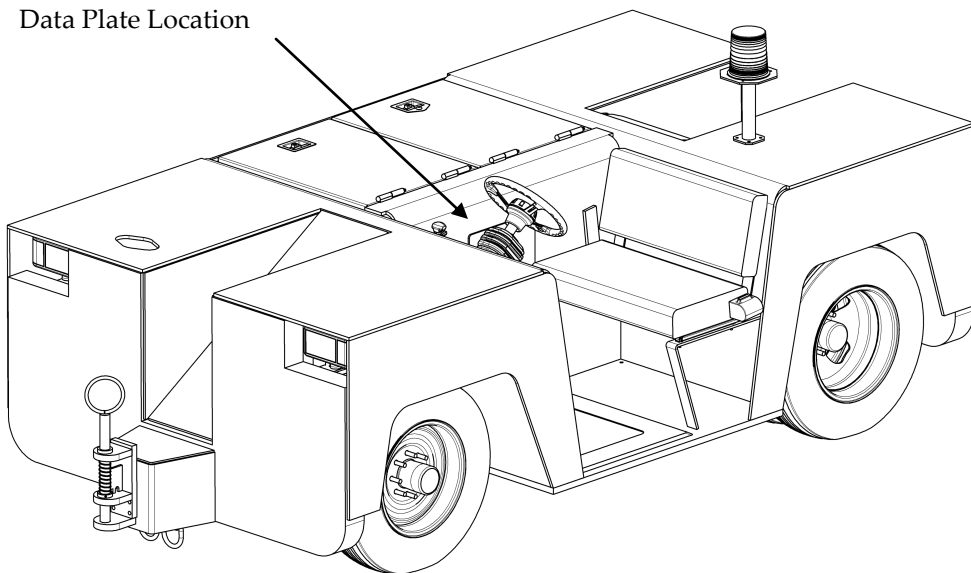
MFG DATE \_\_\_\_\_

ENGINE TYPE \_\_\_\_\_

ENGINE SERIAL NO \_\_\_\_\_

VEHICLE S/N	_____	ENGINE POWER	kW	_____	hp	_____
MFG. DATE	_____	TRACTOR MASS	kg	_____	lb	_____
MODEL #	_____	DRAW BAR PULL	N	_____	lb	_____
ENGINE	_____	TOW CAPACITY	kg	_____	lb	_____
ENGINE S/N	_____	VERTICAL HITCH CAP.	N	_____	lb	_____
MANUFACTURED BY:  26111 NORTHLINE RD. TAYLOR, MI 48180 USA PHONE: 800-671-0431						
sales@eaglelugs.com      www.eaglelugs.com						

Data Plate Location



# WARRANTY

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## WARRANTY INFORMATION

Please read the Eagle Tugs warranty statement (available on our website) carefully.

When contacting Eagle Tugs for warranty or parts service, please have the following information ready:

- Tractor model number
- Tractor serial number
- Current hour reading

# WARRANTY

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## EAGLE WARRANTY REGISTRATION INFORMATION

In order for Eagle to provide the most efficient warranty repair service please fill out and return the Warranty Registration Card included with your vehicle. This form may either be mailed to Eagle or e-mailed to support@eagletugs.com. Please see warranty terms and conditions on the previous page.

### Tires

For pneumatic tires, contact your nearest Power King (Kelly-Springfield) brand dealer who will adjust your claim based on the remaining tread wear as a percent of total new tread.

For solid tires, contact Eagle directly.

### Battery

In the U.S. and Canada, call 1-888-823-0954 or 1-877-255-2287

Outside the Continental U.S. and Canada please contact Eagle directly.

## YANMAR ENGINE WARRANTY REGISTRATION INFORMATION

The following pertains to warranty regarding the Yanmar engine only. For warranty issues not related to the engine in your tug please contact Eagle Tugs directly at 800-671-0431.

The Purchaser should register the Product as soon as possible after purchase. Registration may allow Yanmar to provide Product updates, Product improvements and other important information to the Purchaser. Registration will also make processing a future warranty claim more efficient and convenient for the Purchaser and Yanmar. A Purchaser should register the Product on-line by entering the required information into the Customer Registration screens found on Yanmar's website at <http://www.yanmar.co.jp>. To register product, click on the Customer Registration link. Go to Industrial Engines and then click on the Industrial Engine link. Enter the registration information in the necessary fields.

## AUTHORIZED YANMAR DISTRIBUTOR INFORMATION

The Yanmar Distributor Information can be found on the Yanmar website at

[www.yanmar.com/industrial/dealerlocatormainmap.asp](http://www.yanmar.com/industrial/dealerlocatormainmap.asp). If you need help finding a distributor in your area please call Eagle Tugs at 800-671-0431.

# WARRANTY

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## Eagle Tugs Service Bulletin ESB-02-08

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**Date:** October 14, 2008

**Affected Models:** Diesel powered TT series tow tractors

**Subject:** Tier 3/Stage IIIA diesel engine fuel requirements

**Background:**

The EPA mandated change to Tier 3 diesel engines and EC directives for Stage IIIA diesel engines with higher emission requirements has caused some changes to recommended and acceptable fuels. This document will clarify those requirements as they pertain to Eagle Tugs' products.

**Tier 2:**

Eagle Tugs is currently phasing out Tier 2 engines as part of EPA and EC mandated controls. These engines will no longer be available for sale unless part of a military exemption, or being exported to non-conforming countries.

Tier 2 engines will run on standard diesel fuels 1-D and 2-D with sulfur content up to 5000ppm without modification.

Tier 2 engines will run on jet fuels Jet-A and JP8 with either lubricity filter / additives, or OEM fuel system modifications to accommodate the lower lubricity jet fuels.

**Tier 3 / Stage IIIA:**

Eagle Tugs is currently phasing in Tier 3 / Stage IIIA conforming engines per EPA and EC mandates.

Tier 3 engines will run on fuels with sulfur content of less than 500 ppm or .05% without modification. This includes fuels commonly referred to Low Sulfur Diesel (LSD) and Ultra Low Sulfur Diesel (ULDS).

Tier 3 engines will NOT run properly on Jet-A or JP8 fuel due to the high sulfur content. The EGR system on tier 3 engines allows sulfur in the fuel to recirculate from the exhaust back into the intake where it is converted to sulfuric acid which corrodes internal engine components. In the future as jet fuel standards are directed towards lower sulfur content, this may change.

**Tabulated Data:**

	High-Sulfur Diesel Fuel	LSD or ULSD Fuel	JetA and JP8
<b>Tier 2</b>	No modification necessary	No modification necessary	Requires lubricity enhancement or engine modification
<b>Tier 3 / Stage IIIA</b>	Not acceptable	No modification necessary	Not acceptable

If you have any questions, please contact Eagle technical support at 734-442-1000.

# SAFETY INFORMATION

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## IMPORTANT SAFETY NOTICE

Appropriate service methods and proper repair procedures are essential for the safe, reliable operation of all industrial engines as well as the personal safety of the individual performing the work. This Service Manual provides general directions for accomplishing service and repair work with tested and effective techniques. Following them will help assure reliability.

There are numerous variations in procedures, techniques, tools and parts for servicing equipment, as well as in the skill of the individual doing the work. This Manual cannot possibly anticipate all such variations and provide advice or cautions as to each. Accordingly, anyone who departs from the instructions provided in this Manual must first establish he compromises his/her personal safety, and/or the equipment integrity by his/her choice of methods, tools or parts.

## WARNINGS

The following list contains some general WARNINGS that you should follow when you work on equipment:

- Always wear safety glasses for eye protection.
- Use safety stands whenever a procedure requires you to be under the equipment.
- Be sure that the ignitions switch is always in the OFF position, unless otherwise required by the procedure.
- Set the parking brake (if equipped) when working on the equipment. Place wood blocks (4" x 4" or larger) to the front and rear surfaces of the tires to provide further restraint from inadvertent equipment movement.
- Operate the engine only in a well-ventilated area to avoid the danger of carbon monoxide.
- Keep yourself and your clothing away from moving parts when the engine is running, especially the fan and belts.
- To prevent serious burns, avoid contact with hot metal parts such as the radiator, exhaust manifold, tail pipe, catalytic converter and muffler.
- Do not smoke while working on the equipment.
- To avoid injury, always remove rings, watches, loose hanging jewelry, and loose clothing before beginning to work on the equipment. Tie long hair securely behind the head.
- Keep hands and other objects clear of the radiator and blades.



# SERVICE PARTS ILLUSTRATIONS & DETAIL

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## IDENTIFICATION KEY

The following abbreviations are used throughout the parts lists in this section.

Abbreviation	Meaning	Purpose
NL	Not Listed	Part required but not shown on diagram
NPN	No Part Number	Parts shown and numbered, but not stocked and sold by Eagle. Typically used for bolts, clamps, etc...
AR	As required	

### **!TO HELP US SERVICE YOU BETTER. HAVE TUG MODEL AND SERIAL NUMBER AVAILABLE WHEN ORDERING PARTS**

NOTE: THIS MANUAL COVERS PARTS & SERVICE FOR EAGLE TT10 and TT1 2 ALL WHEEL DRIVE MODELS WITH BOTH THE YANMAR TIER II AND TIER III ENGINES. PLEASE BE SURE TO CHECK THE HEADING ON EACH PAGE TO SEE IF THE PARTS REFERENCED ARE FOR A :

#### **YANMAR TIER II DIESEL**

OR

#### **YANMAR TIER III DIESEL**

ALL PAGES WITHOUT THE ABOVE IN THE DESCRIPTION DENOTE PARTS ARE USED ON MODELS POWERED WITH BOTH A YANMAR TIER II AND YANMAR TIER III ENGINE.

TO DETERMINE IF YOUR TUG IS POWERED BY A TIER II OR TIER II ENGINE YOU CAN CHECK THE DISPLAY LOCATED ON THE DASHBOARD BY THE FOLLOWING.

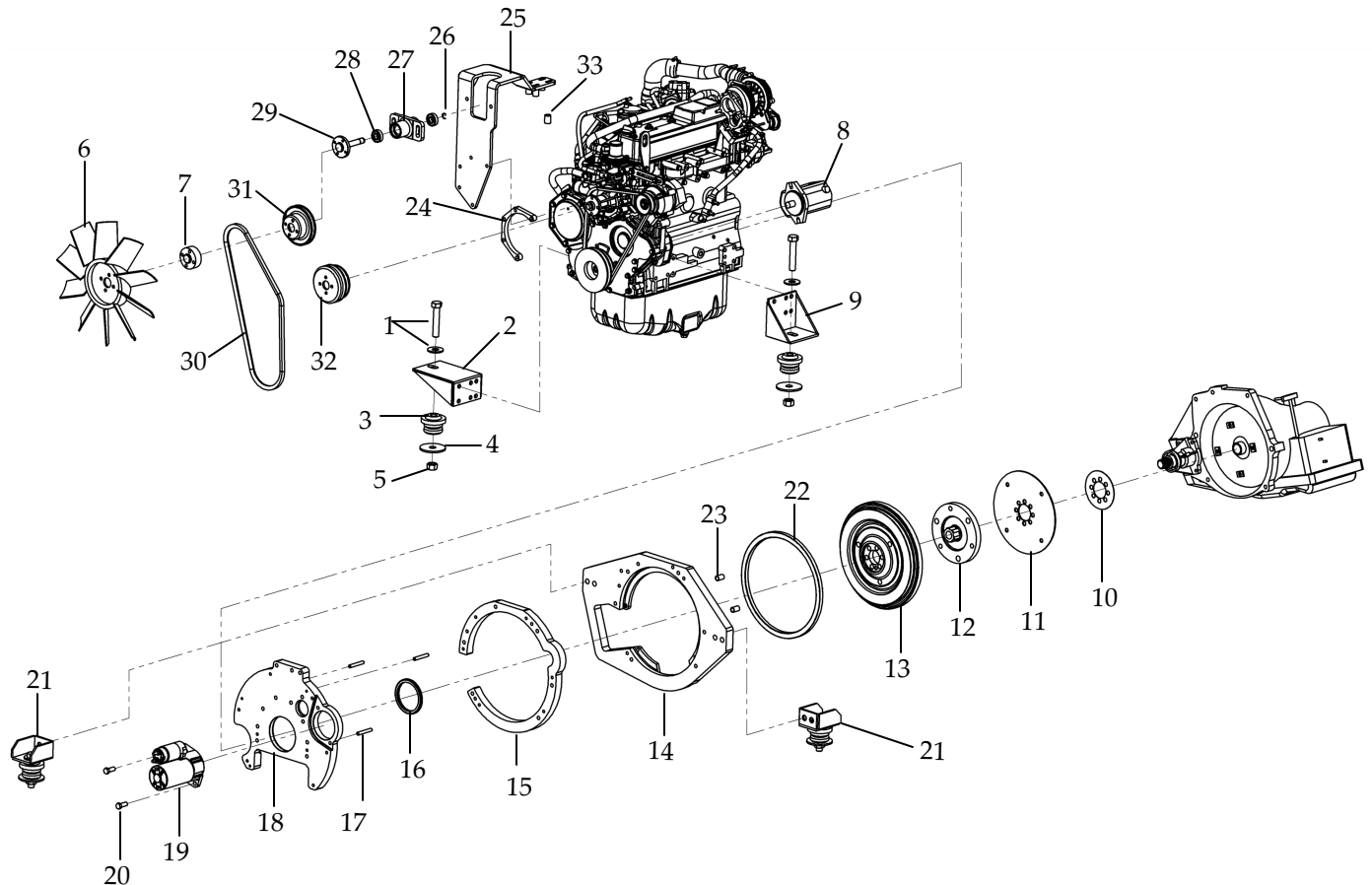
1. TURN DISPLAY "ON"
2. PRESS ENTER
3. SCROLL TO "EAGLE SET UP"
4. PRESS ENTER
5. YOU WILL SEE "SELECT ENGINE : YANMAR TIER II OR YANMAR TIER III" ON YOUR SCREEN

TO DETERMINE IF YOUR TUG IS POWERED BY A TIER II OR TIER III ENGINE WITHOUT TURNING ON DISPLAY.

ALL TIER II TUGS ARE EQUIPPED WITH A MANUAL ALUMINUM FOOT PEDAL AND ALL TIER III TUGS ARE EQUIPEED WITH A BLACK PLASTIC ELECTRONIC FOOT PEDAL.

# POWER TRAIN

## ENGINE DRESS



STANDARD TORQUE CHART

Thread Size x Pitch mm		M6 x 1.0	M8 x 1.25	M10 x 1.5	M12 x 1.75	M14 x 1.5	M16 x 1.5
Tightening Torque	in-lb	87-105					
	ft-lb		17-21	32-40	58-72	94-108	160-174
	N-m	9.8-11.8	22.6-28.4	45-54.8	78.5-98.10	127.2-146.8	216.2-235.8
	kgf/m	1.1	2.03-2.09	4.5-5.5	8.0-10.0	12.5-15.5	21-25

Note: Torque values shown in this manual are for clean, non-lubricated fasteners unless otherwise specified.

CAUTION: The tightening torque in the above Standard Torque Chart should be applied only to the bolts with a "7" head. (JIS strength classification 71).

\*Apply 60% torque to bolts that are not listed.

\*Apply 80% torque when tightened to aluminum alloy.

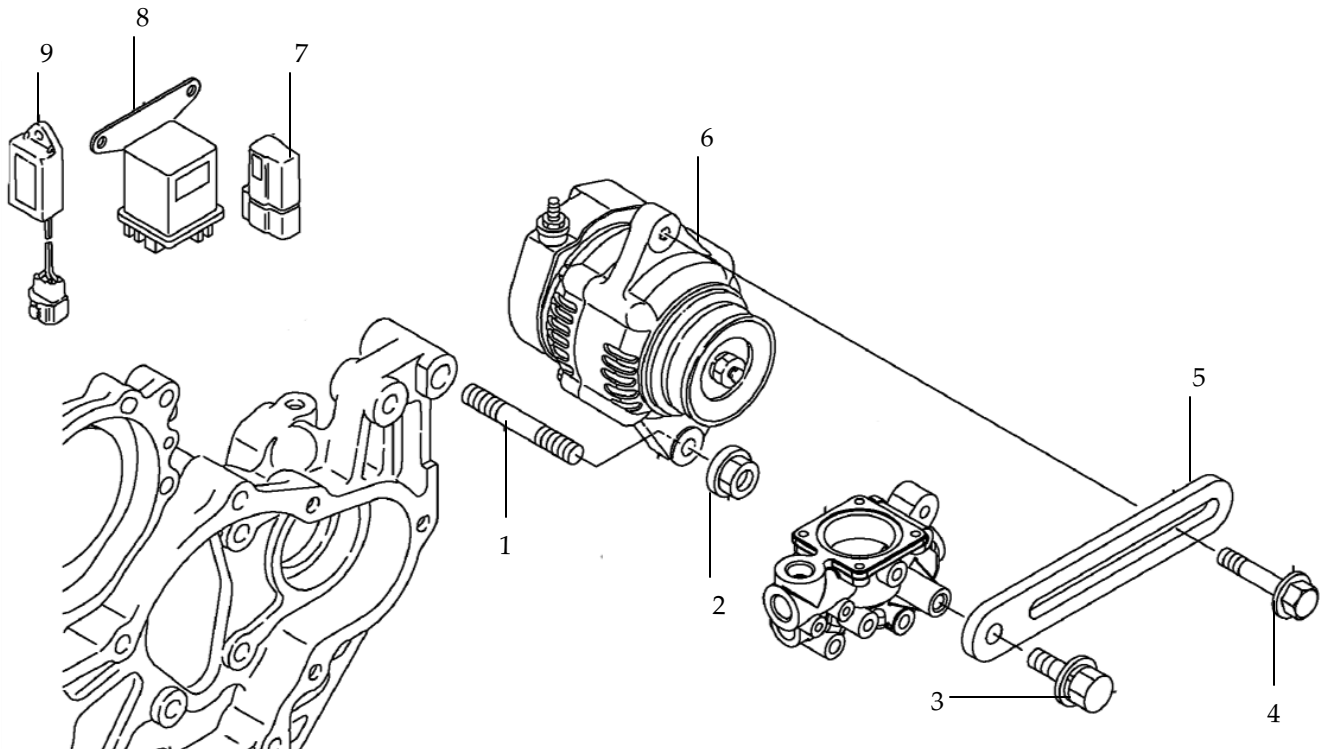
# POWER TRAIN

## ENGINE DRESS

Item	Part Number	Qty	Description
1	NPN	4	3/4-16 X 3 1/2 BOLT & 3/4" FLAT WASHER
2	B-TT5D-00008-1	1	ENGINE MOUNT
3	A-TT5D-00013-1	4	ISOLATOR
4	A-TT5D-00010	4	LORD WASHER
5	NPN	4	3/4" LOCK NUT
6	A-TT8-00312	1	FAN
7	A-TT8-00360	1	FAN SPACER
8	SP20PB11L145H9L	1	PRINCE PUMP
9	B-TT5D-00006-1	1	FRONT ENGINE MOUNT
10	TM27C00305-ID	1	FLEX PLATE WASHER
11	B-TT10TD-00016-ID	1	FLEX PLATE
12	B-TT5D-00017-4TNV	1	FLEX PLATE ADAPTER
13	129953-21570	1	FLYWHEEL WITH RING GEAR
14	B-TT10TD-00001-4TNV	1	TRANS PLATE
15	B-TT10TD-00002	1	TRANS PLATE SPACER
16	129900-01780	1	OIL SEAL TIER II
16	129900-01790	1	OIL SEAL TIER III
17	41HN28	3	ADJ PLATE DOWEL PINS 3/8 X 2.5
18	TMD27B00521-4TNV	1	ENGINE PLATE
19	129940-77010	1	HIGH OUTPUT STARTER
20	26116-120302	2	BOLT, M12 X 30 PLATED
21	A-TT4-00011	2	ENGINE MOUNT TRANS PLATE
22	129900-21600	1	RING GEAR
23	5240849	2	TRANSMISSION DOWEL PIN
24	A-TT8-00361	1	FAN BRACKET SPACER
25	A-TT10-00354	1	REMOTE FAN BRACKET TURBO TIER III
25	A-TT10-00354-MOD	1	REMOTE FAN BRACKET TURBO TIER II
26	A-TT8-00358	1	REMOTE FAN SNAP RING
27	A-TT8-00355	1	REMOTE FAN SHAFT HOUSING
28	A-TT8-00357	2	REMOTE FAN BEARING
29	A-TT8-00356	1	REMOTE FAN SHAFT
30	A-TT8-00362	1	REMOTE FAN BELT TIER III
30	9510	1	REMOTE FAN BELT TIER II
31	129916-21680	1	CRANK PULLEY, DOUBLE GROOVE
32	A-TT10-00353	1	WATER PUMP SHEAVE TIER III
32	A-TT8-00353	1	WATER PUMP SHEAVE TIER II
33	A-TT4-00405	4	SPACER (QTY 2 ON TIER II MODEL)

# POWER TRAIN

## 40 AMP ALTERNATOR ASSEMBLY – YANMAR TIER II

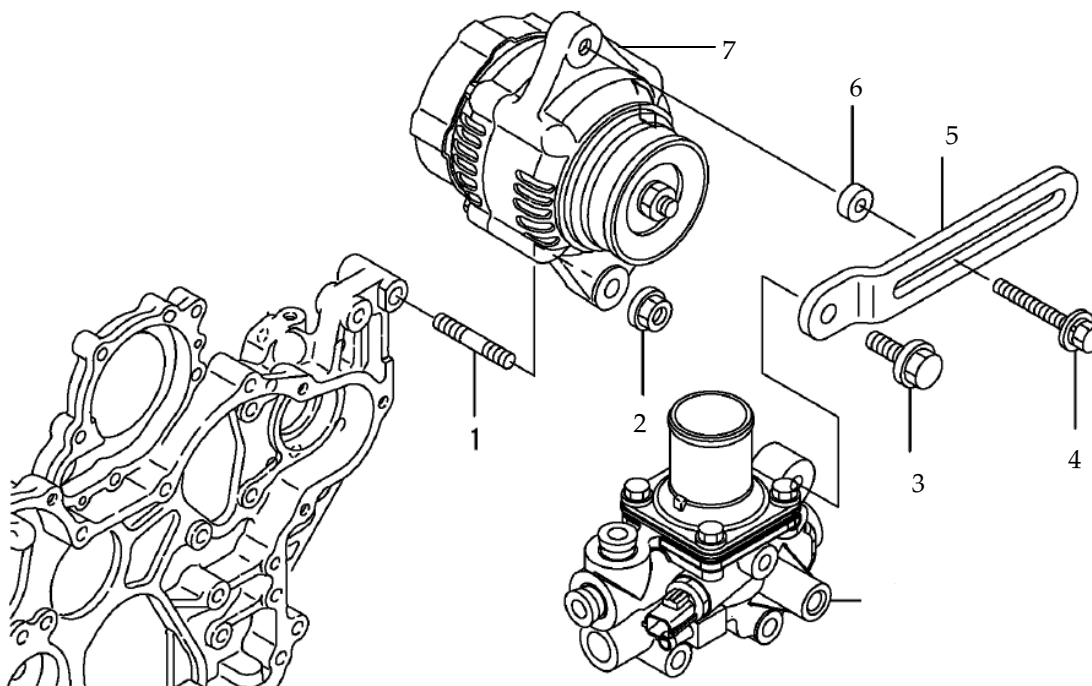


Item	Part Number	Qty	Description
1	129795-01900	1	STUD, ALTERNATOR
2	26306-100002	2	NUT, ALTERNATOR
3	26014-080252	1	BOLT, M8 X 25 PLATED
4	119810-77340	1	BOLT ,ADJUSTING
5	129900-77330	1	ADJUSTER BRACKET, ALTERNATOR 40 AMP
6	129423-77200	1	ALTERNATOR 40 AMP(BLUE ID TAG)
7	119643-66900	1	DIODE
8	119650-77910	1	RELAY, GLOW
9	128300-77920	1	TIMER
10	129211-77920	1	TIMER

\*Most commonly used on Models TT-10 and TT-12.

# POWER TRAIN

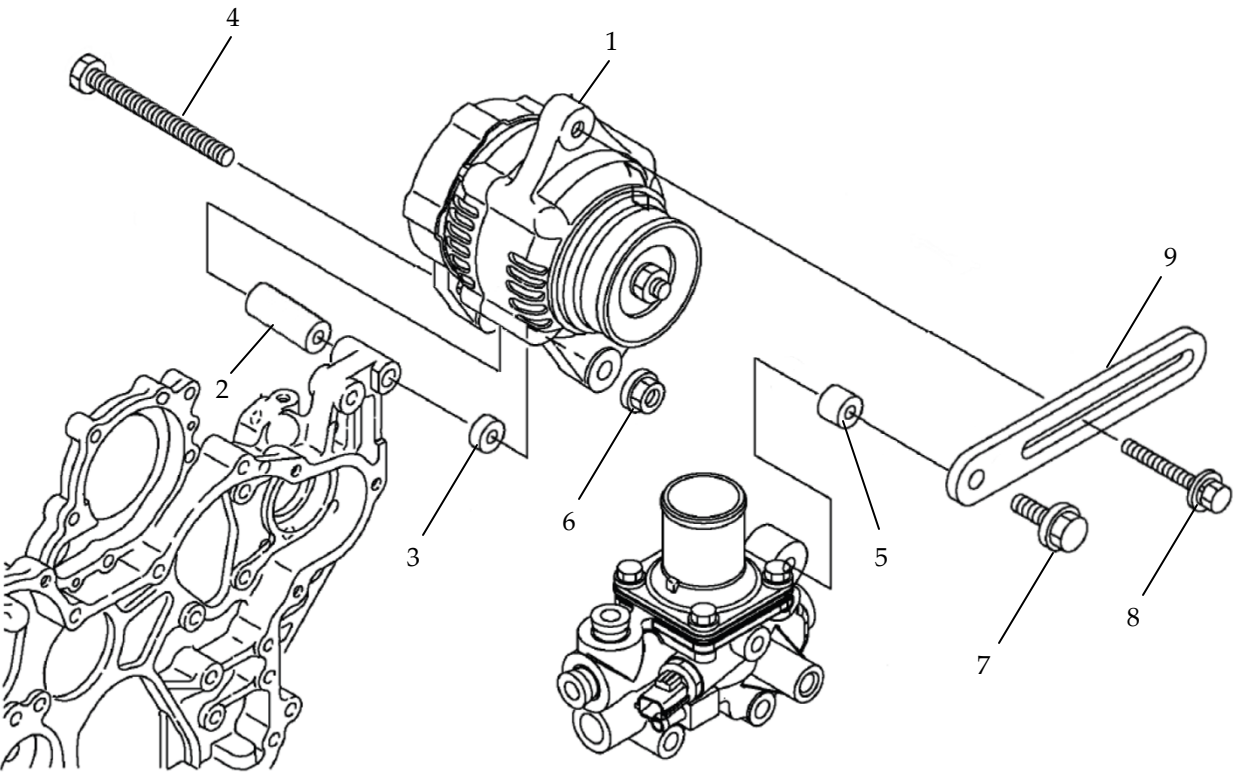
## 55 AND 80 AMP ALTERNATOR ASSEMBLY – YANMAR TIER II AND III DIESEL



Item	Part Number	Qty	Description
1	129795-01900	1	STUD, ALTERNATOR 55 AMP ALT
1	26116-101202	1	STUD, ALTERNATOR 80 AMP ALT
2	26306-100002	2	NUT, ALTERNATOR 55 AMP ALT
2	26366-100002	2	NUT, ALTERNATOR 80 AMP ALT
3	26106-080222	1	BOLT, M8 X 22 PLATED 55 AMP ALT
3	26014-080252	2	STUD 80 AMP ALT
4	129972-77341	1	BOLT ,ADJUSTING
5	129972-77330	1	ADJUSTER BRACKET 55 AMP ALT
5	129900-77330	1	ADJUSTER BRACKET 80 AMP ALT
6	119940-77270	1	SPACER 55 AMP ALT (RED ID TAG)
6	129470-77340	1	SPACER 80 AMP ALT
7	119626-77210	1	ALTERNATOR 55 AMP
7	129612-77290	1	ALTERNATOR 80 AMP

# POWER TRAIN

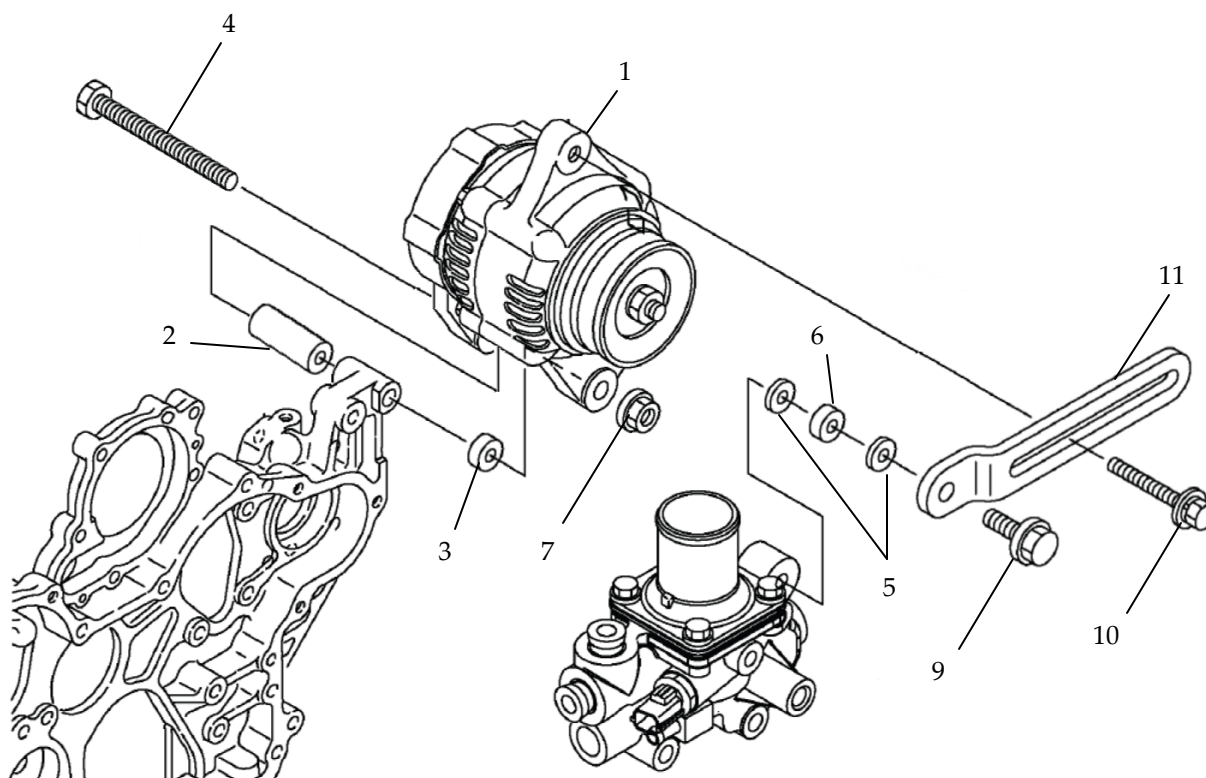
TIER II 105 AMP HIGH OUTPUT ALTERNATOR ASSEMBLY  
TUGS WITH CAB OPTION OR AS REQUIRED BY ENGINEERING DUE TO ADDED OPTIONS



Item	Part Number	Qty	Description
1	AE-OPT-0021	1	105A ALTERNATOR
2	NPN	1	1.40 SPACER
3	NPN	1	.23 SPACER
4	NPN	1	M10-1.5 x 130
5	NPN	1	.92 SPACER
6	26306-100002	1	M10-1.5 LOCK NUT
7	26014-080252	1	BOLT M8-1.25 x 45 PLATED
8	26106-080222	1	BOLT ADJUSTING
9	129900-77330	1	ADJUSTING BRACKET
10	A-TT8-00362	1	ALTERNATOR BELT(NOT SHOWN)

# POWER TRAIN

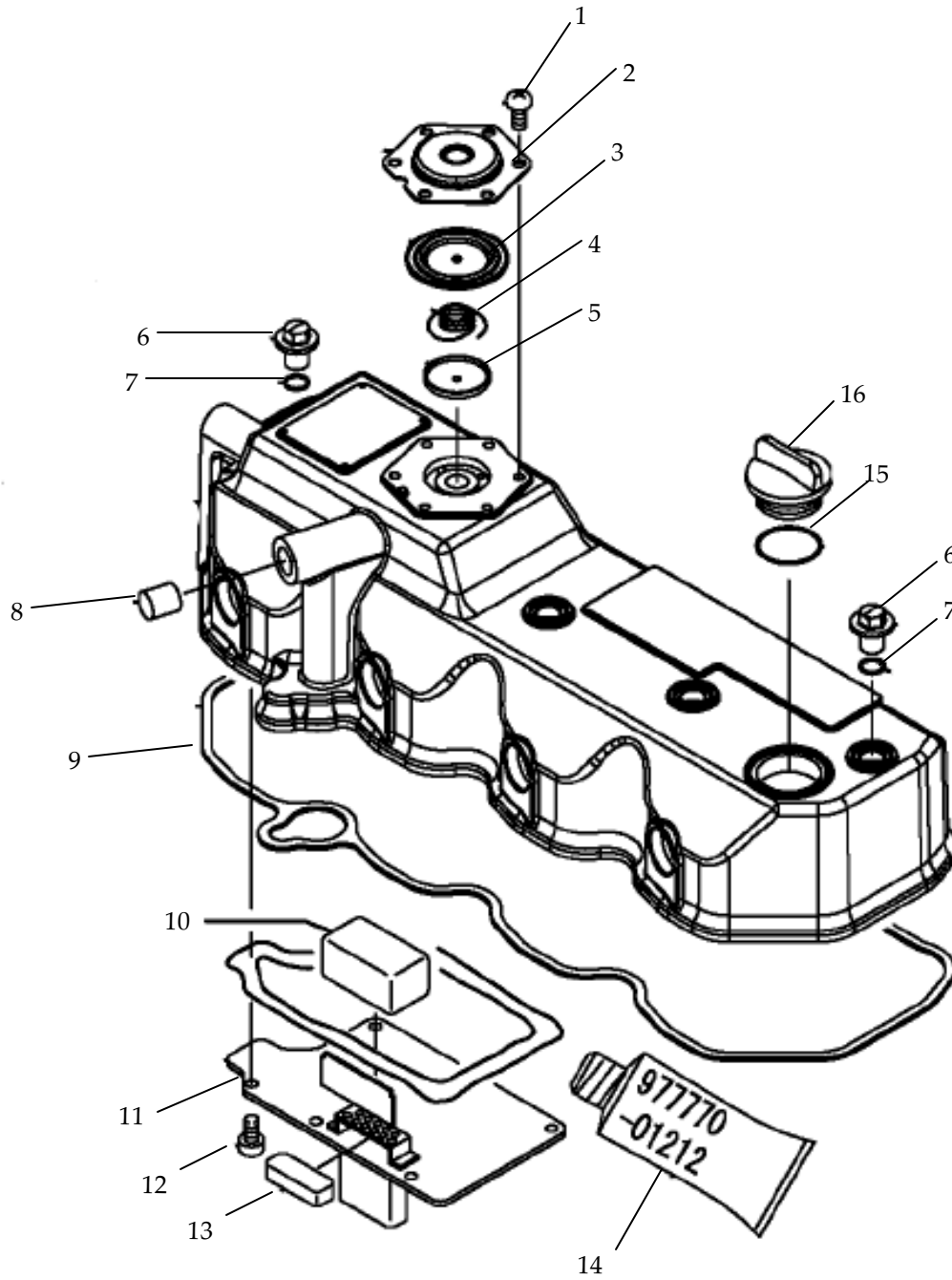
## TIER III 105 AMP HIGH OUTPUT ALTERNATOR ASSEMBLY TUGS WITH CAB OPTION OR AS REQUIRED BY ENGINEERING DUE TO ADDED OPTIONS



Item	Part Number	Qty	Description
1	AE-OPT-0021	1	105A ALTERNATOR
2	NPN	1	1.40 SPACER
3	NPN	1	.23 SPACER
4	NPN	1	M10-1.5 x 130
5	NPN	2	5/16 FLAT WASHER
6	119940-77270	1	SPACER
7	26306-100002	1	M10-1.5 LOCK NUT
8	9440	1	ALTERNATOR BELT(NOT SHOWN)
9	119810-77340	1	BOLT M8 X 22 PLATED
10	26014-080252	1	BOLT ADJUSTING
11	129972-77330	1	ADJUSTING BRACKET

# POWER TRAIN

## HEAD COVER ASSEMBLY YANMAR TIER II & TIER III





# POWER TRAIN

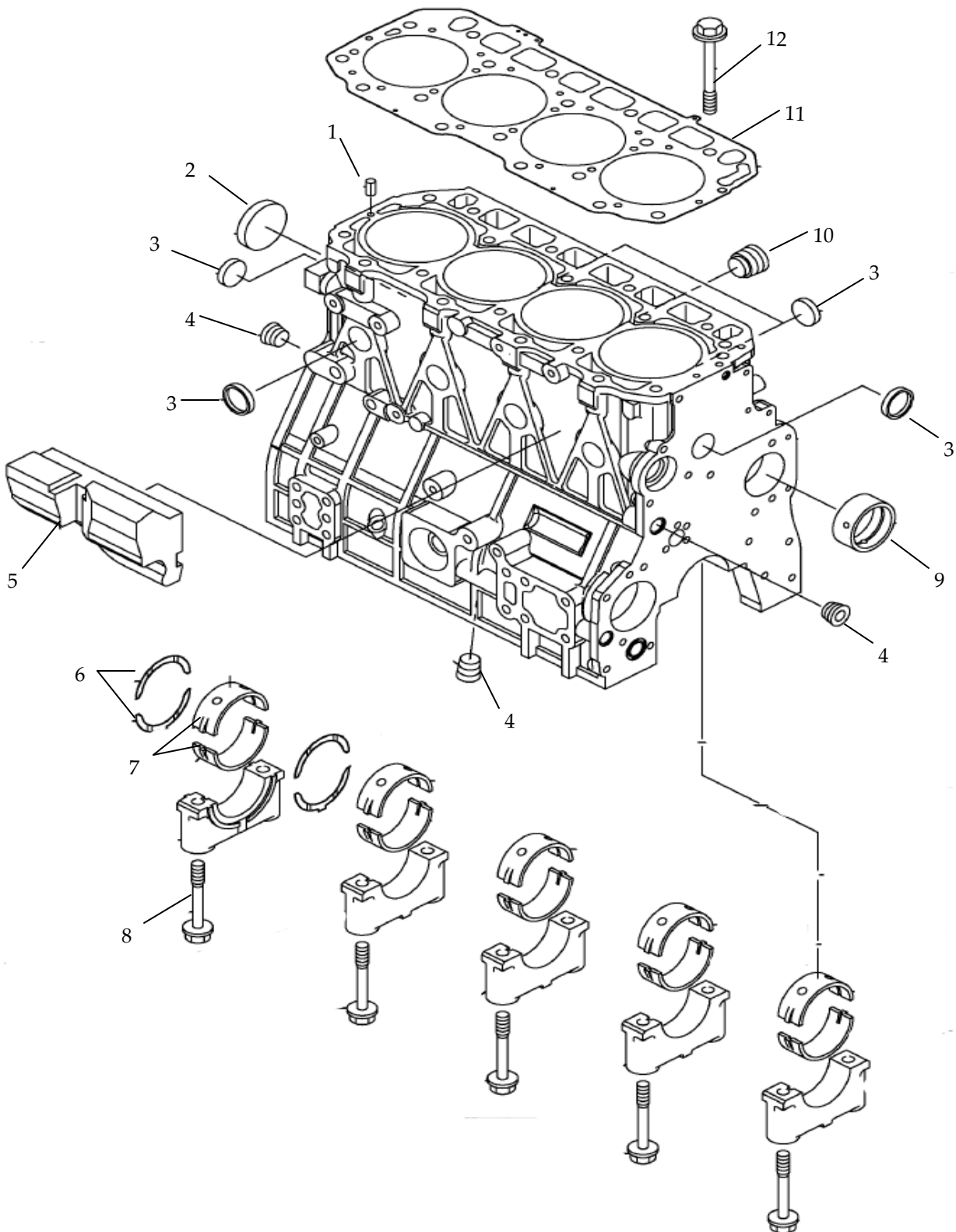
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## HEAD COVER ASSEMBLY YANMAR TIER II & TIER III

Item	Part Number	Qty	Description
1	22857-500100	6	SCREW 5 X 10 TAPIING
2	123907-03120	1	PLATE, BREATHER
3	123907-03100	1	DIAPHRAM, BREATHER
4	123907-03140	1	SPRING, DIAPHRAM
5	123907-03110	1	CENTER PLATE
6	124160-11360	4	KNOB
7	24311-000120	4	O-RING 1A P12.0
8	119640-61400	1	PLUG
9	129907-11310	1	HEADCOVER GASKET
10	129907-03070	1	BAFFLE
11	129907-03010	1	BAFFLE PLATE
12	22857-500100	6	SCREW 5 X 10 TAPIING
13	129907-03060	1	BAFFLE
14	977770-01212	1	GASKET, LIQUID
15	24311-000320	1	O-RING 1A P32.0
16	124160-01751	1	OIL FILLER CAP
17	129907-11320	1	HEAD COVER ASSY INCLUDES ITEMS 1-13

# POWER TRAIN

## CYLINDER BLOCK ASSEMBLY—YANMAR TIER II DIESEL



# POWER TRAIN

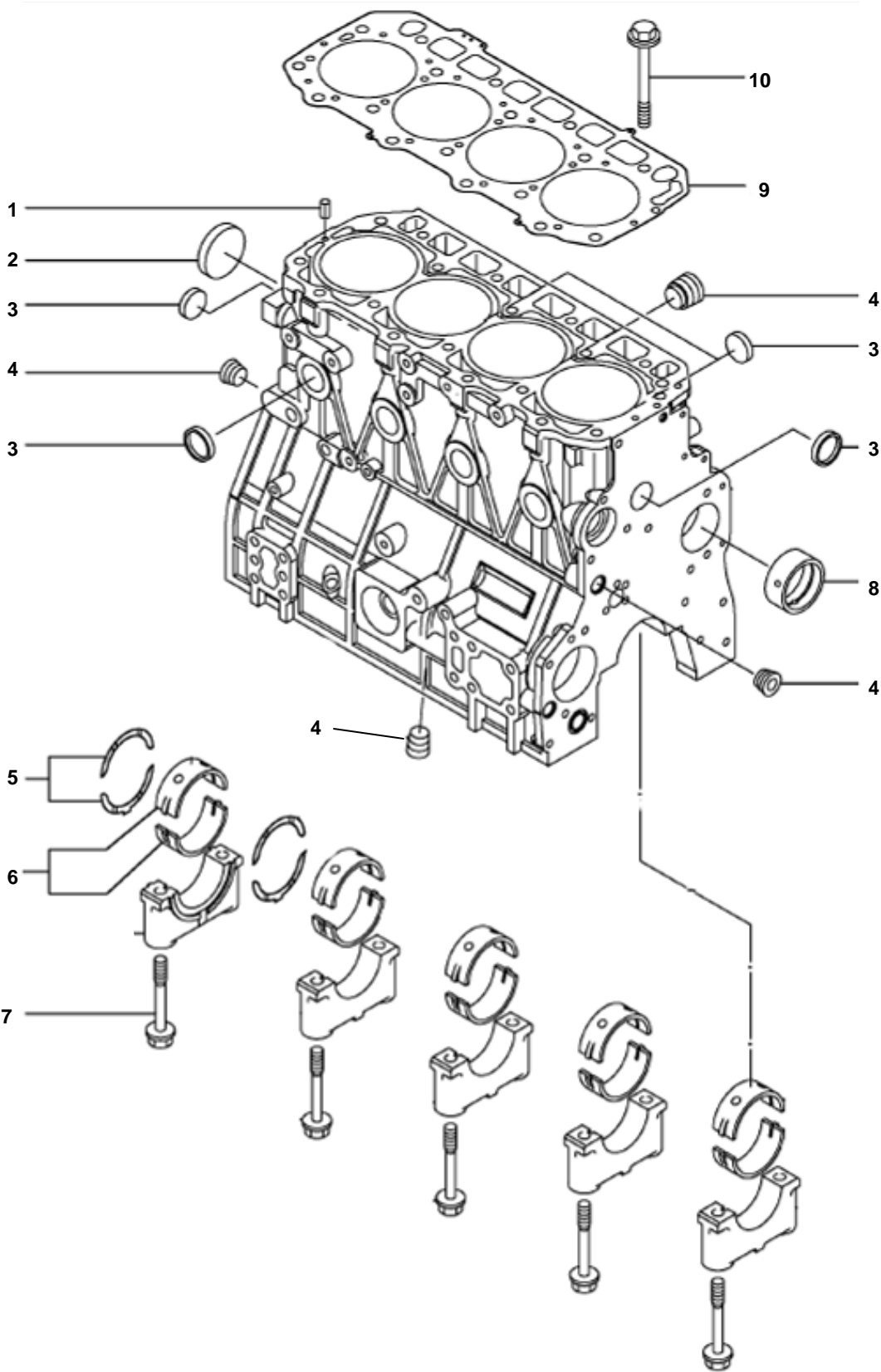
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## CYLINDER BLOCK ASSEMBLY—YANMAR TIER II

Item	Part Number	Qty	Description
1	22351-060012	2	SPRING PIN 6 X 12
2	129900-01250	1	PLUG 55
3	27241-300000	8	PLUG 30
4	23876-030000	3	PLUG PT 3/8 SCREW
5	129907-01190	1	SPACER
6	129900-02930	2	BEARING ASSY, THRUST
6	129900-02940	2	BEARING ASSY, THRUST O/S=.025
7	729900-02800	5	MAIN BEARING SET
7	129900-02340	5	MAIN BEARING SET O/S=.025
8	129900-02020	10	BOLT, METAL CAP
9	129900-02410	1	BUSH, CAMSHAFT
10	171051-01921	1	PLUG
11	129907-01331	1	CYLINDER HEAD GASKET
12	129900-01200	18	BOLT, HEAD
13	729907-01560	1	CYLINDER BLOCK ASSY, INC ITEMS 1-10

# POWER TRAIN

## CYLINDER BLOCK ASSEMBLY – YANMAR TIER III DIESEL



# POWER TRAIN

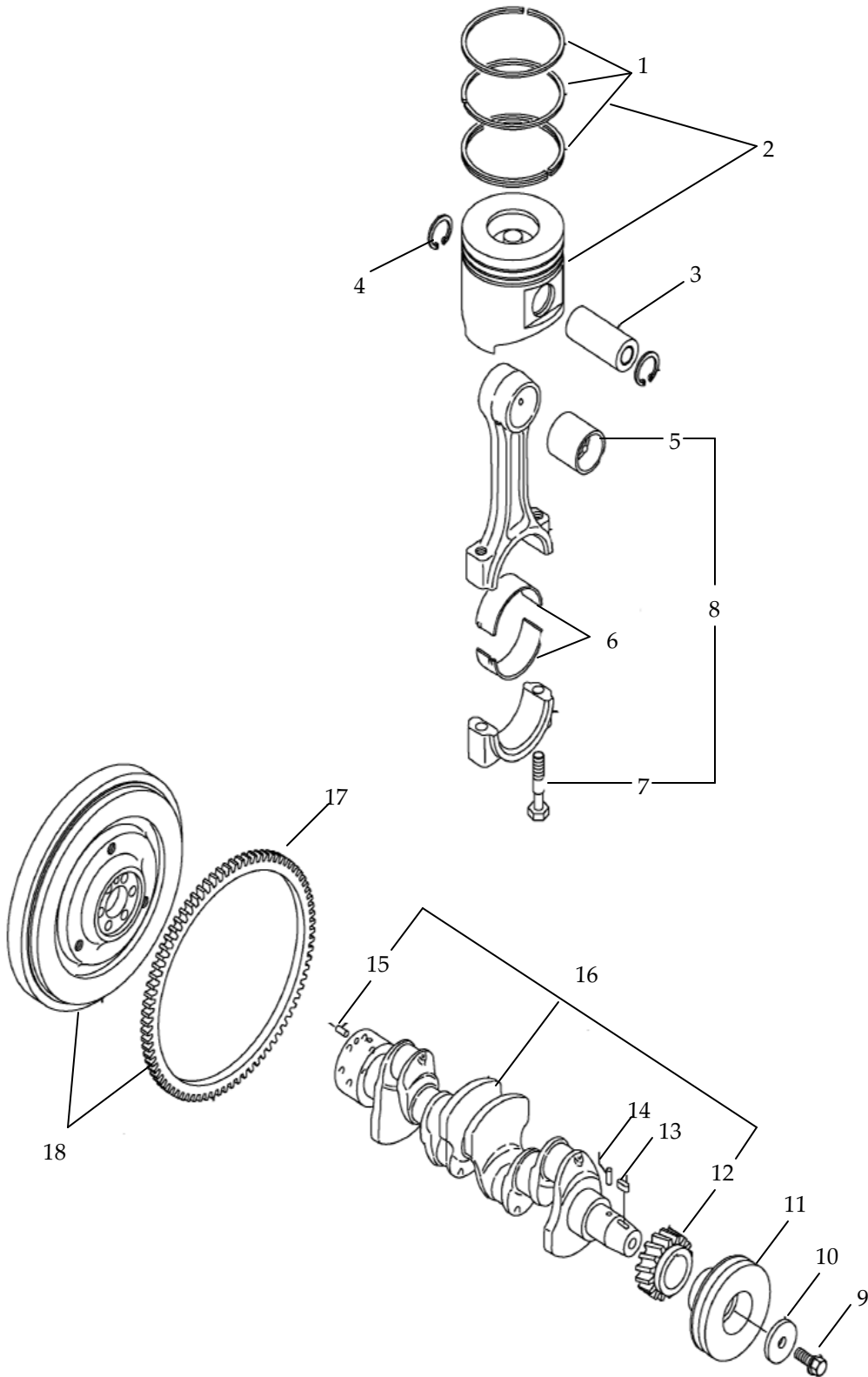
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## CYLINDER BLOCK ASSEMBLY—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	22351-060012	2	SPRING PIN 6 X 12
2	129900-01250	1	PLUG 55
3	27241-300000	8	PLUG 30
4	23876-030000	3	PLUG PT 3/8 SCREW
5	129900-02931	2	BEARING ASSY, THRUST
5	129900-02941	2	BEARING ASSY, THRUST O/S=.025
6	729900-02801	5	MAIN BEARING SET
6	129900-02341	5	MAIN BEARING SET O/S=.025
7	129900-02020	10	BOLT, METAL CAP
8	129900-02410	1	BUSH, CAMSHAFT
9	129907-01331	1	CYLINDER HEAD GASKET
10	129900-01200	18	BOLT, HEAD
11	729927-01560	1	CYLINDER BLOCK ASSY, INC ITEMS 1-10

# POWER TRAIN

## CRANKSHAFT & PISTON—YANMAR TIER II DIESEL



# POWER TRAIN

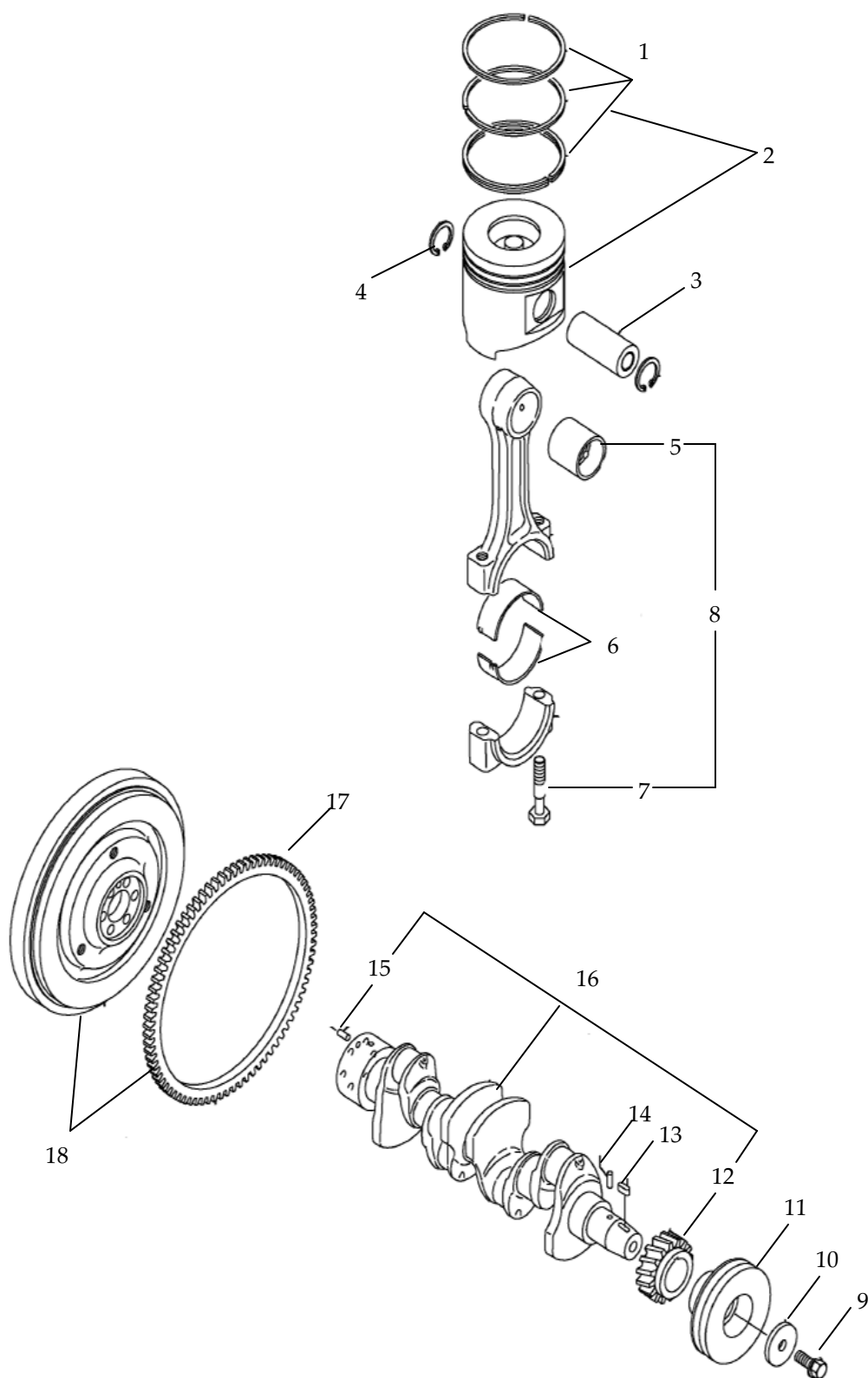
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## CRANKSHAFT & PISTON—YANMAR TIER II DIESEL

Item	Part Number	Qty	Description
1	129907-22050	4	RING SET STANDARD
1	729907-22950	4	RING SET O/S=0.25
2	129907-22090	4	PISTON WITH RING STANDARD
2	129907-22910	4	PISTON WITH RING STANDARD O/S=0.25
3	120130-22301	4	PISTON PIN
4	22252-000300	8	CIRCLIP 30
5	129900-23910	4	BUSH, PISTON PIN
6	129900-23600	4	BEARING ASSY, CRANKCASE PIN STANDARD
6	129900-23610	4	BEARING PIN O/S=.025
7	129900-23200	8	BOLT, ROD
8	129900-23000	4	CONNECTING ROD ASSY
9	121850-21680	1	BOLT, V-PULLEY
10	129900-21640	1	WASHER
11	129907-21660	1	V-PULLEY, CRANKCASE
12	129900-21200	1	GEAR, CRANKSHAFT
13	22512-070140	1	KEY 7 X 14
14	121850-21290	1	PARALLEL PIN
15	121850-21920	1	PARALLEL PIN 10 X 22
16	129902-21000	1	CRANKSHAFT ASSY INCLUDES ITEMS 12-15
17	129900-21600	1	RING GEAR
18	129953-21570	1	FLYWHEEL WITH RING GEAR

## POWER TRAIN

## CRANKSHAFT & PISTON—YANMAR TIER III DIESEL





# POWER TRAIN

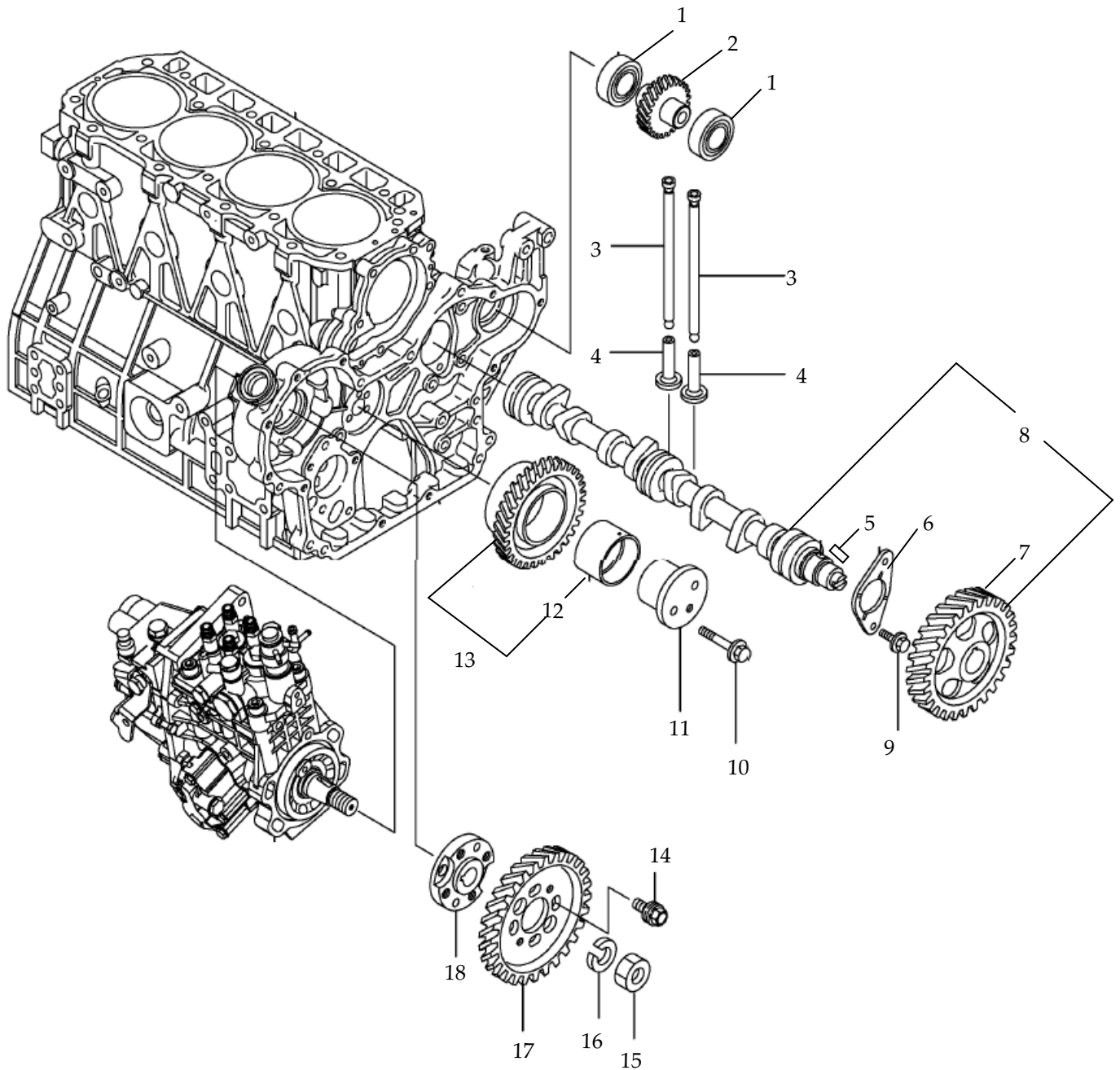
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## CRANKSHAFT & PISTON – YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	129927-22050	4	RING SET STANDARD
1	729927-22950	4	RING SET O/S=0.25
2	129907-22080	4	PISTON WITH RING STANDARD
2	129907-22900	4	PISTON WITH RING STANDARD O/S=0.25
3	120130-22301	4	PISTON PIN
4	22252-000300	8	CIRCLIP 30
5	129900-23911	4	BUSH, PISTON PIN
6	129900-23601	4	BEARING ASSY, CRANKCASE PIN STANDARD
6	129900-23611	4	BEARING PIN O/S=.025
7	129900-23200	8	BOLT, ROD
8	129900-23001	4	CONNECTING ROD ASSY
9	129916-21610	1	BOLT, V-PULLEY
10	129900-21640	1	WASHER
11	129907-21660	1	V-PULLEY, CRANKCASE
12	129900-21220	1	GEAR, CRANKSHAFT
13	22512-070140	1	KEY 7 X 14
14	121850-21290	1	PARALLEL PIN
15	121850-21920	1	PARALLEL PIN 10 X 22
16	129902-21050	1	CRANKSHAFT ASSY INCLUDED ITEMS 12-15
17	129900-21600	1	RING GEAR
18	129953-21570	1	FLYWHEEL WITH RING GEAR

# POWER TRAIN

## CAMSHAFT & DRIVING GEAR—YANMAR TIER II DIESEL



# POWER TRAIN

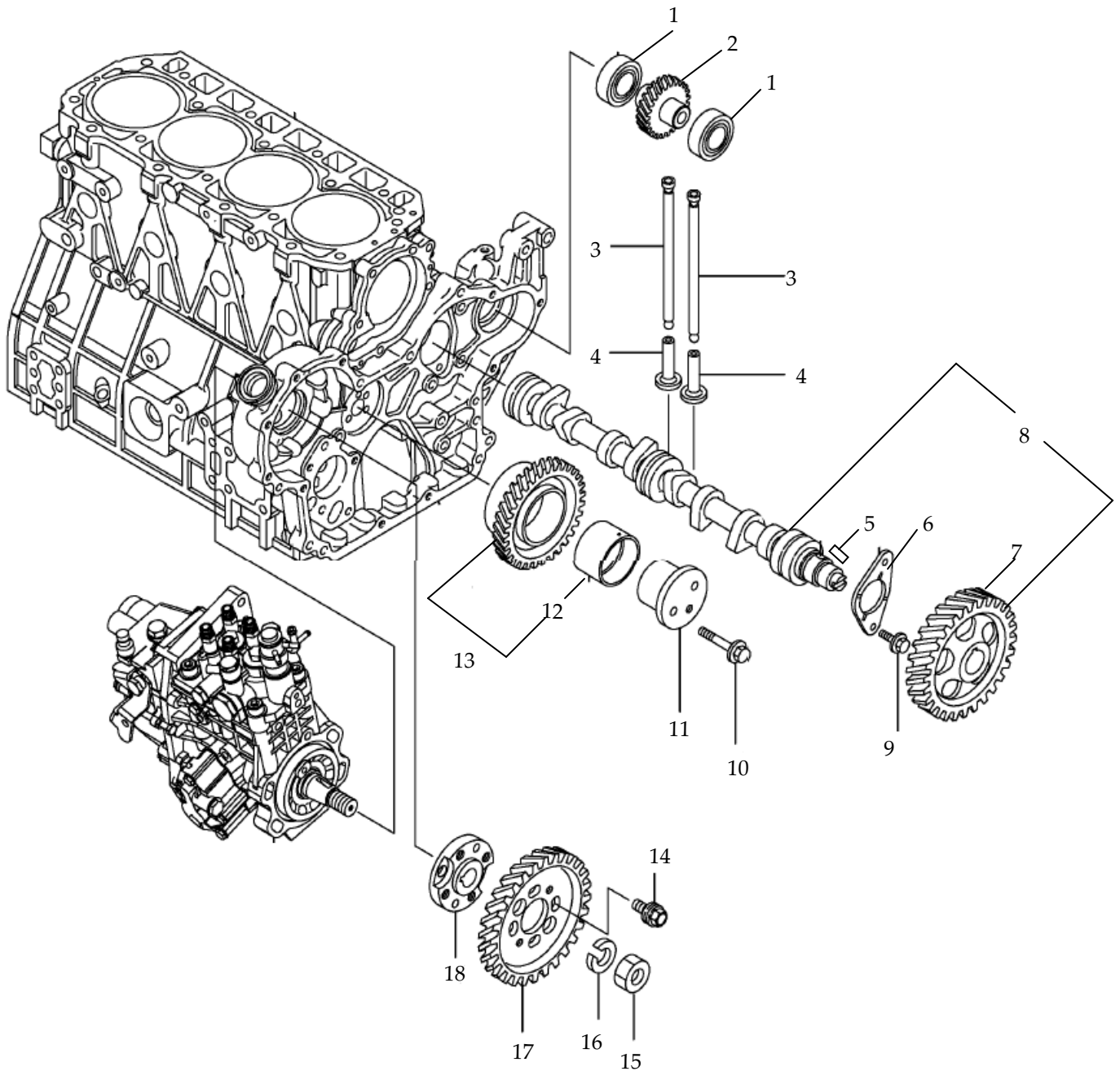
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## CAMSHAFT & DRIVING GEAR—YANMAR TIER II DIESEL

Item	Part Number	Qty	Description
1	129900-26250	2	BALL BEARING
2	129980-26200	1	GEAR, HO PUMP
3	129907-14400	8	PUSH ROD
4	129150-14200	8	TAPPET
5	22512-070140	1	KEY 7 X 14
6	129150-02450	1	THRUST BEARING(CAM)
7	129900-14100	1	GEAR, CAMSHAFT
8	129907-14581	1	CAMSHAFT ASSEMBLY INCLUDES ITEMS 5-7
9	26106-080162	2	BOLT, M8 X 16 PLATED
10	26106-080552	3	BOLT, M8 X 55 PLATED
11	123900-25060	1	SHAFT(GEAR IDLE)
12	129150-25920	1	BUSH, IDLE GEAR
13	129900-25100	1	GEAR ASSEMBLY INCLUDES ITEM 12
14	129953-25300	4	BOLT
15	26776-180002	1	NUT, M18 LOCK
16	22217-180000	1	SPRING WASHER 18
17	123907-25909	1	GEAR, FUEL INJECTION PUMP
18	158563-51150	1	FLANGE

# POWER TRAIN

## CAMSHAFT & DRIVING GEAR—YANMAR TIER III DIESEL



# POWER TRAIN

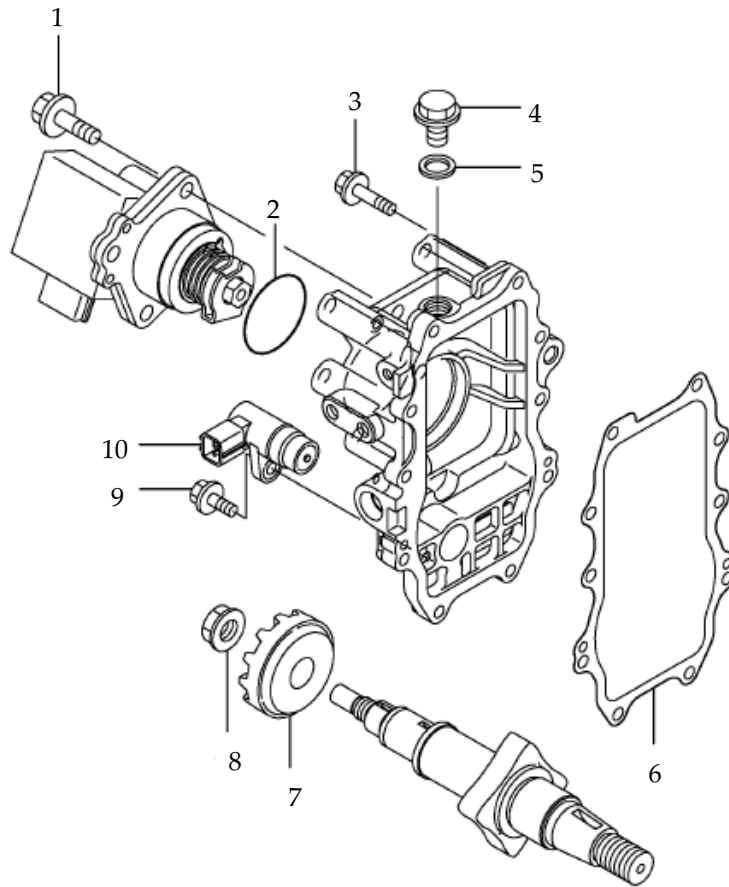
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## CAMSHAFT & DRIVING GEAR—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	129900-26250	2	BALL BEARING
2	129980-26200	1	GEAR, HO PUMP
3	129907-14400	8	PUSH ROD
4	129150-14200	8	TAPPET
5	22512-070140	1	KEY 7 X 14
6	129150-02450	1	THRUST BEARING(CAM)
7	129900-14100	1	GEAR, CAMSHAFT
8	129907-14581	1	CAMSHAFT ASSEMBLY INCLUDES ITEMS 5-7
9	26106-080162	2	BOLT, M8 X 16 PLATED
10	26106-080552	3	BOLT, M8 X 55 PLATED
11	123900-25060	1	SHAFT(GEAR IDLE)
12	129150-25920	1	BUSH, IDLE GEAR
13	129900-25100	1	GEAR ASSEMBLY INCLUDES ITEM 12
14	129953-25300	4	BOLT
15	26776-180002	1	NUT, M18 LOCK
16	22217-180000	1	SPRING WASHER 18
17	123907-25909	1	GEAR, FUEL INJECTION PUMP
18	158563-51150	1	FLANGE

# POWER TRAIN

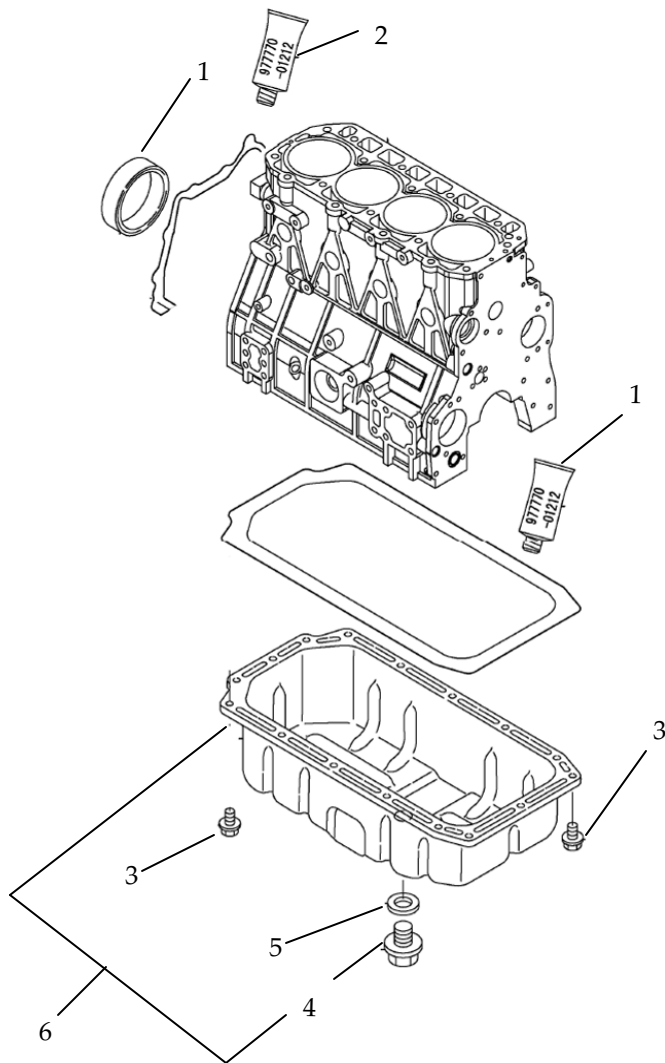
## GOVERNOR ASSEMBLY—YANMAR TIER III DIESEL (ONLY)



Item	Part Number	Qty	Description
1	26106-080252	3	BOLT, M8 X 25 PLATED
2	24341-000480	1	O-RING 1A S-48.0
3	26106-060252	10	BOLT, M6 X 25 PLATED
4	23887-120002	1	PLUG, M12 HEX
5	22190-120000	1	SEAL WASHER 12(BOLT)
6	158560-61050	1	GASKET
7	158553-61780	1	GEAR, SENSOR
8	129008-61301	1	NUT, GOVERNOR WEIGHT
9	26106-060162	1	BOLT, M6 X 16 PLATED
10	158557-61720	1	SENSOR

# POWER TRAIN

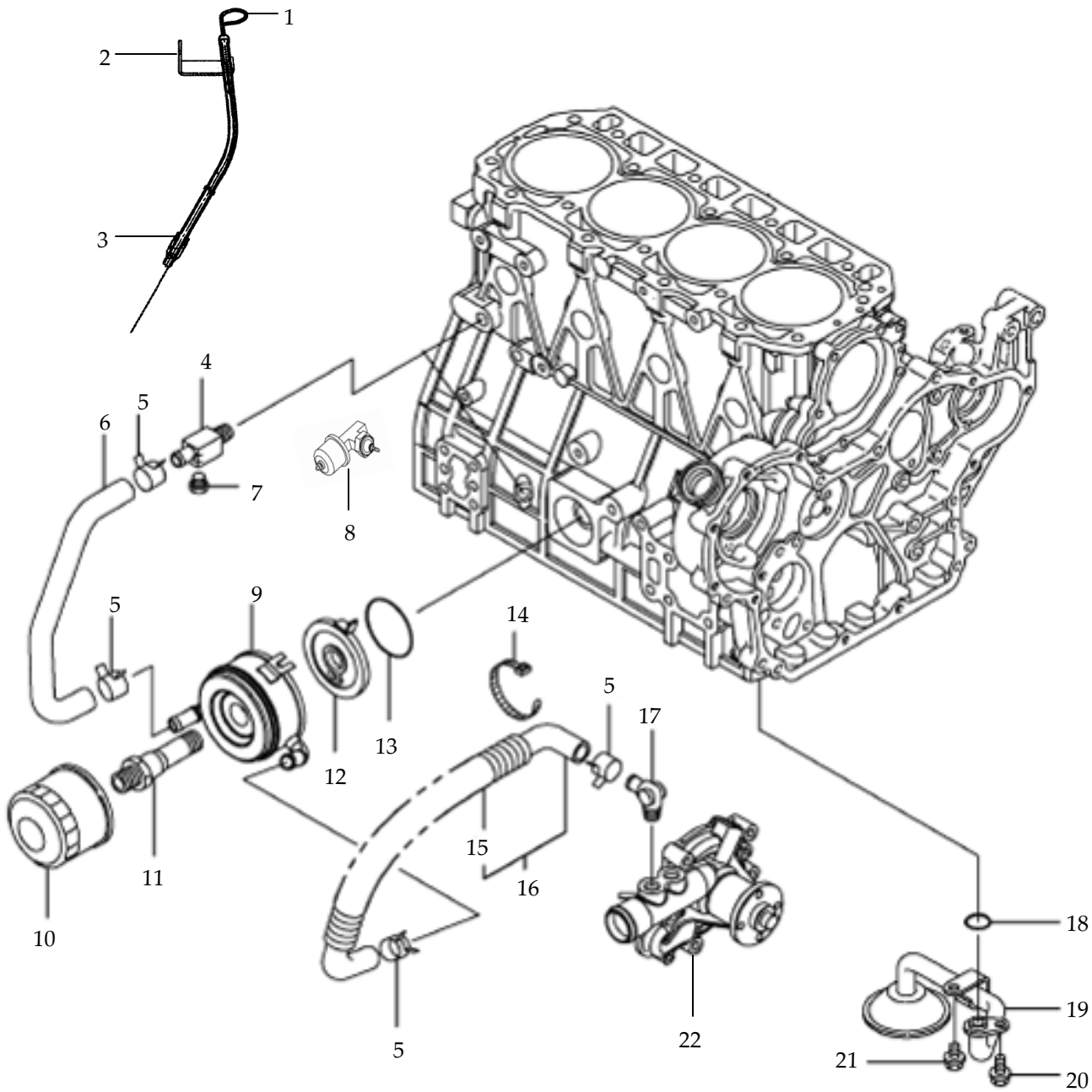
## OIL PAN ASSEMBLY YANMAR TIER II & TIER III



Item	Part Number	Qty	Description
1	122916-01790	1	SEAL
2	977770-01212	1	GASKET, LIQUID
3	26106-080122	16	BOLT M8 X 12 PLATED
4	119640-01640	1	DRAIN PLUG
5	22190-220002	1	SEAL WASHER 22S
6	129916-01710	1	OIL PAN ASSEMBLY INCLUDES ITEMS 4 & 5

# POWER TRAIN

## LUBE – OIL SYSTEM YANMAR TIER II & TIER III





# POWER TRAIN

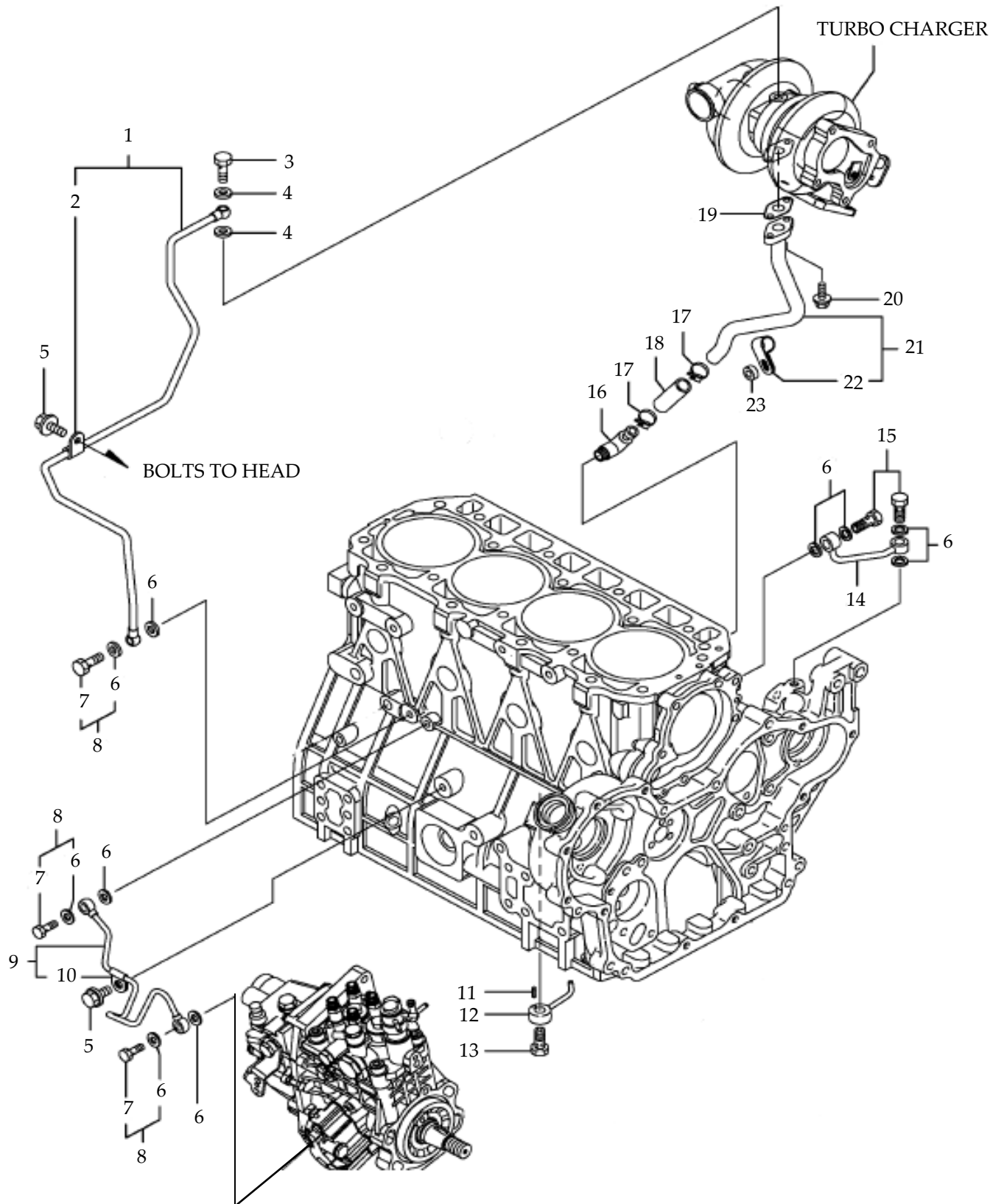
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## LUBE — OIL SYSTEM YANMAR TIER II & TIER III

Item	Part Number	Qty	Description
1	129907-34811	1	DIPSTICK
2	129928-34850	1	TUBE, DIPSTICK
3	24311-240100	1	O-RING, DIPSTICK(NOT SHOWN)
4	129006-44480	1	JOINT
5	23000-025000	4	#25 CLAMP
6	129908-49060	1	PIPE, COOLING WATER
7	171056-49120	1	DRAIN PLUG
8	A-TT4-00651-1	1	OIL PRESSURE SENDING UNIT
9	129908-33010	1	OIL COOLER, INCL O-RING 123912-33050
10	129150-35153	1	OIL FILTER ELEMENT
11	123912-33100	1	BOLT,OIL COOLER
12	129908-33100	1	BRACKET, OIL COOLER TIER II
12	129908-33101	1	BRACKET, OIL COOLER TIER III
13	24321-000600	1	O-RING 1A G-60.0
14	121750-59890	1	CLAMP 140
15	123910-49610	1	TUBE, CORRUGATED
16	123910-49600	1	PIPE, COOLING WATER INCL ITEM #15
17	129466-49300	1	ELBOW, PT 3/8
18	129900-32030	1	O-RING P20
19	129900-35000	1	PIPE ASSEMBLY OIL INLET TIER II
19	129953-35000	1	PIPE ASSEMBLY OIL INLET TIER III
20	26106-080162	1	BOLT M8 X 16 PLATED
21	26106-080122	1	BOLT M8 X 12 PLATED
22	129907-42000	1	WATER PUMP TIER II
22	129927-42000	1	WATER PUMP TIER III

# POWER TRAIN

## LUBE — OIL LINES YANMAR TIER II



# POWER TRAIN

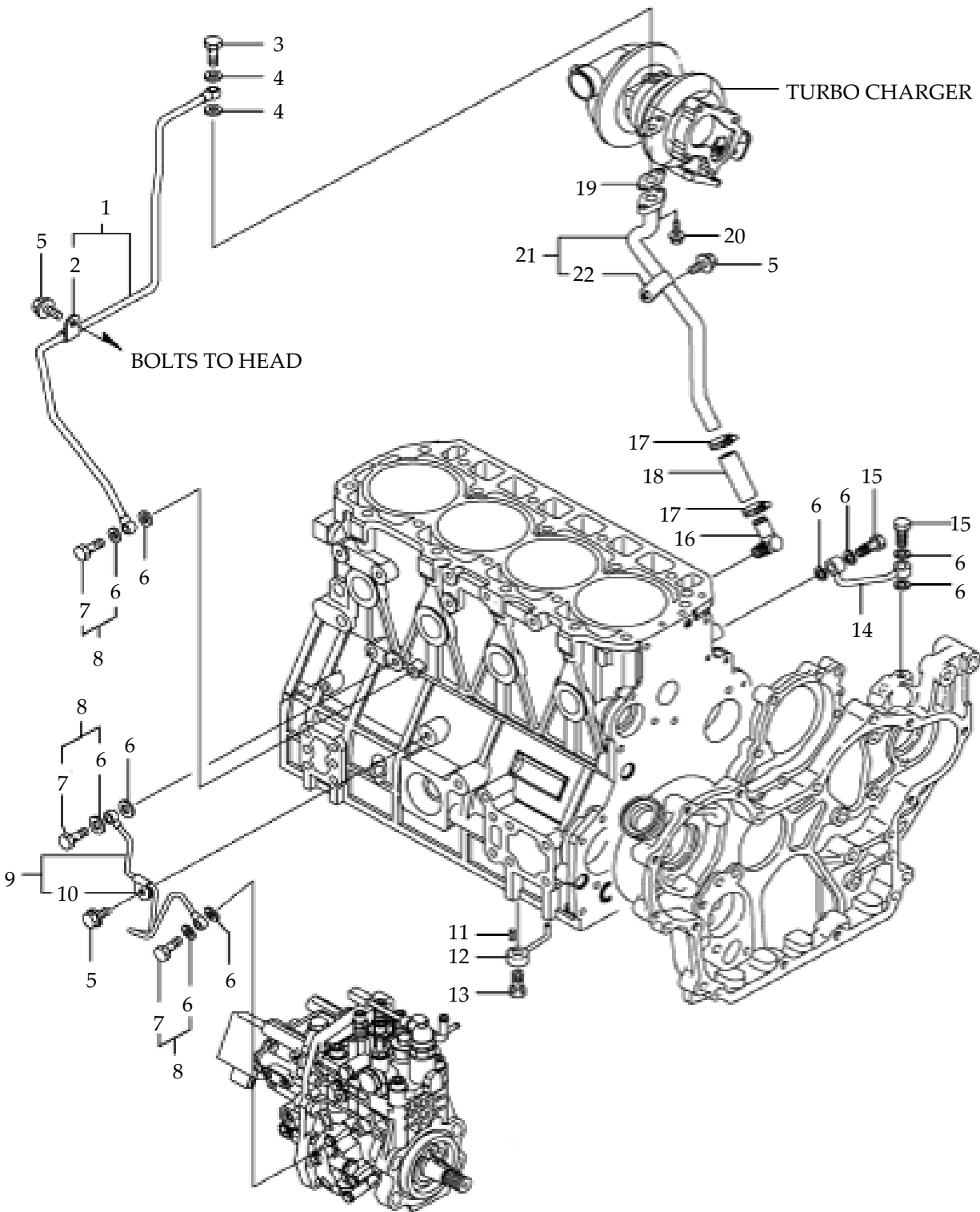
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## LUBE – OIL LINES YANMAR TIER II

Item	Part Number	Qty	Description
1	129935-39040	1	PIPE, LUBE OIL
2	124223-39900	1	RETAINER
3	121252-39150	1	BOLT, PIPE JOINT
4	23414-100000	2	GASKET 10, ROUND
5	26106-080122	2	BOLT, M8 X 12 PLATED
6	22190-080002	9	SEAL WASHER 8S
7	23857-030000	3	JOINT BOLT
8	129005-59830	3	BOLT ASSY, INCL ITEMS 6 & 7
9	129907-39061	1	PIPE ASSY, INCL ITEM 10
10	123907-39500	1	SUPPORT
11	22351-030010	4	SPRING PIN 3 X 10
12	119000-39650	4	NOZZLE, PISTON JET
13	129908-39410	4	CHECK VALVE ASSY
14	129930-39050	1	PIPE
15	105010-39140	2	BOLT, PIPE JOINT
16	124070-13300	1	ELBOW, PT 3/8
17	23000-025000	2	CLAMP #25
18	123901-39820	1	HOSE
19	129908-39690	1	GASKET 10.7
20	26106-060162	2	BOLT, M6 X 16 PLATED
21	129935-39610	1	PIPE, LUBE OIL INCL ITEM 22
22	123910-39850	1	RETAINER
23	106500-44810	1	SPACER

# POWER TRAIN

## LUBE – OIL LINES YANMAR TIER III



# POWER TRAIN

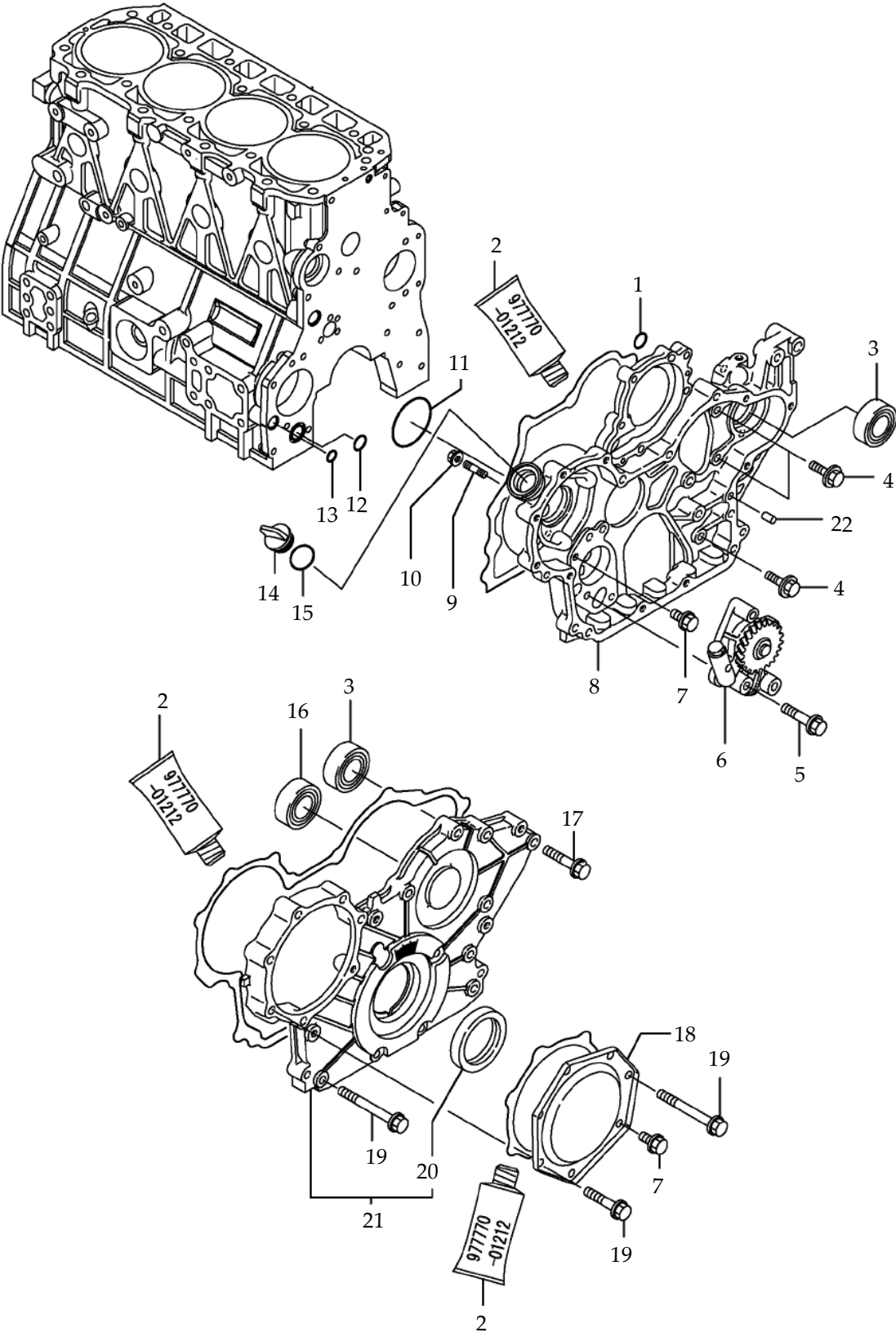
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## LUBE — OIL LINES YANMAR TIER III

Item	Part Number	Qty	Description
1	129928-39450	1	PIPE, LUBE OIL
2	124223-39900	1	RETAINER
3	121252-39150	1	BOLT, PIPE JOINT
4	23414-100000	2	GASKET 10, ROUND
5	26106-080122	3	BOLT, M8 X 12 PLATED
6	22190-080002	9	SEAL WASHER 8S
7	23857-030000	3	JOINT BOLT
8	129005-59830	3	BOLT ASSY, INCL ITEMS 6 & 7
9	129927-39060	1	PIPE ASSY, INCL ITEM 10
10	123907-39500	1	SUPPORT
11	22351-030010	4	SPRING PIN 3 X 10
12	119000-39650	4	NOZZLE, PISTON JET
13	129908-39410	4	CHECK VALVE ASSY
14	129930-39050	1	PIPE
15	105010-39140	2	BOLT, PIPE JOINT
16	124070-13300	1	ELBOW, PT 3/8
17	23000-025000	2	CLAMP #25
18	123901-39820	1	HOSE
19	129908-39690	1	GASKET 10.7
20	26106-060162	2	BOLT, M6 X 16 PLATED
21	129935-39610	1	PIPE, LUBE OIL INCL ITEM 22
22	123910-39850	1	RETAINER

# POWER TRAIN

## GEAR HOUSING—YANMAR TIER II



# POWER TRAIN

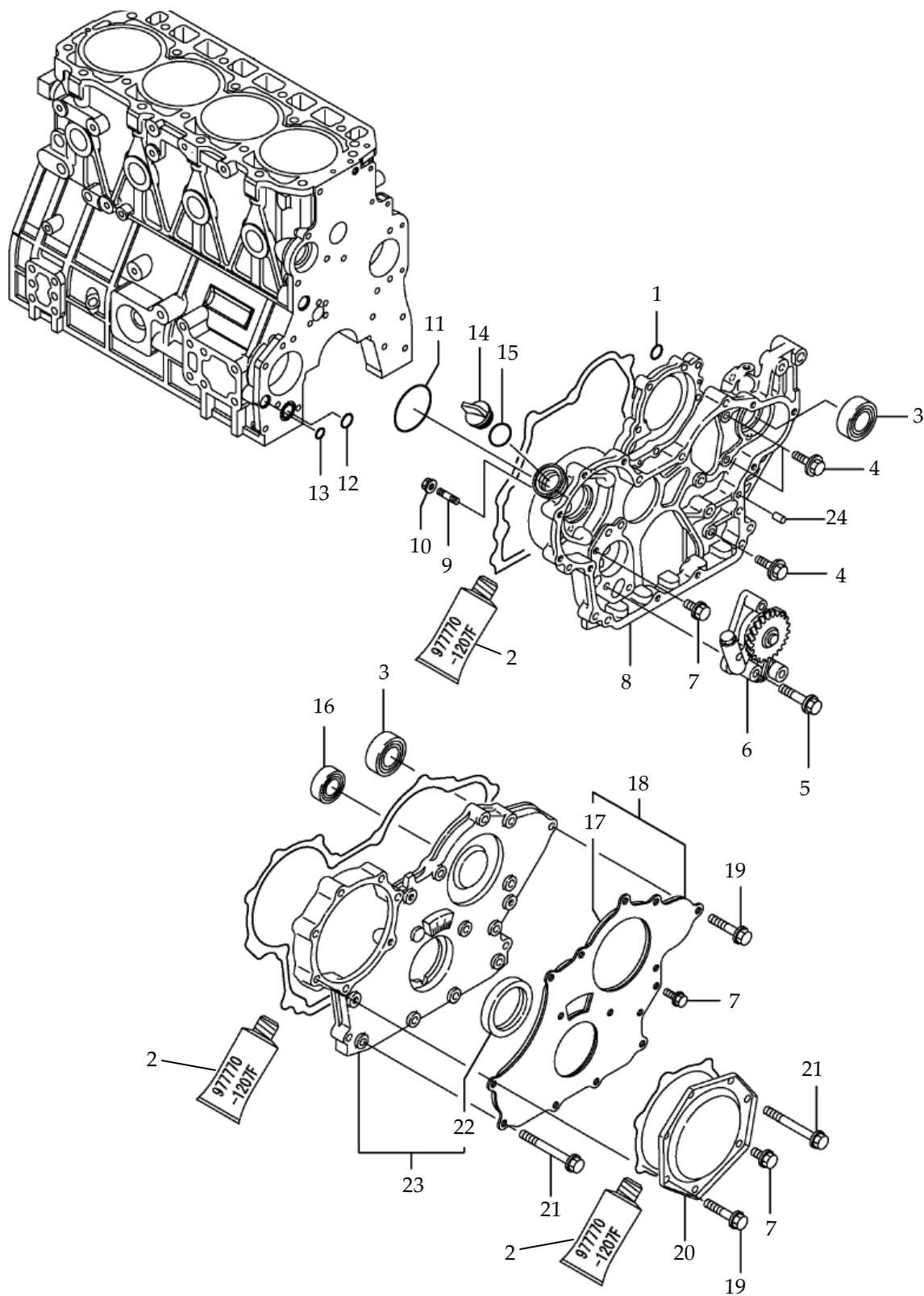
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## GEAR HOUSING—YANMAR TIER II

Item	Part Number	Qty	Description
1	24311-000070	1	O-RING 1A P7.0
2	977770-01212	3	GASKET, LIQUID
3	129900-26250	2	BALL BEARING
4	26106-080202	3	BOLT, M8 X 20 PLATED
5	26106-080452	3	BOLT, M8 X 45 PLATED
6	129908-32060	1	OIL PUMP ASSEMBLY TIER II ONLY
7	26106-080162	2	BOLT, M8 X 16 PLATED
8	129933-01500	1	GEAR HOUSING
9	26216-100302	4	STUD, BOLT
10	26306-100002	4	NUT
11	24351-030750	1	PACKING, 3075
12	129900-32030	1	O-RING P20
13	129900-32040	1	O-RING P14
14	124160-01751	1	OIL FILLER CAP
15	24311-000320	1	O-RING 1A P32.0
16	129900-14140	1	BEARING #6205
17	26106-080402	10	BOLT M8 X 40 PLATED
18	129900-01740	1	COVER, FI PUMP
19	129001-91810	7	BOLT, M8 X 70 PLATED
20	129900-01780	1	SEAL, OIL
21	729907-01540	1	HOUSING ASSY COVER INCLUDES ITEM 20
22	129100-01580	4	PARALLEL PIN 8 X 16

# POWER TRAIN

## GEAR HOUSING – YANMAR TIER III





# POWER TRAIN

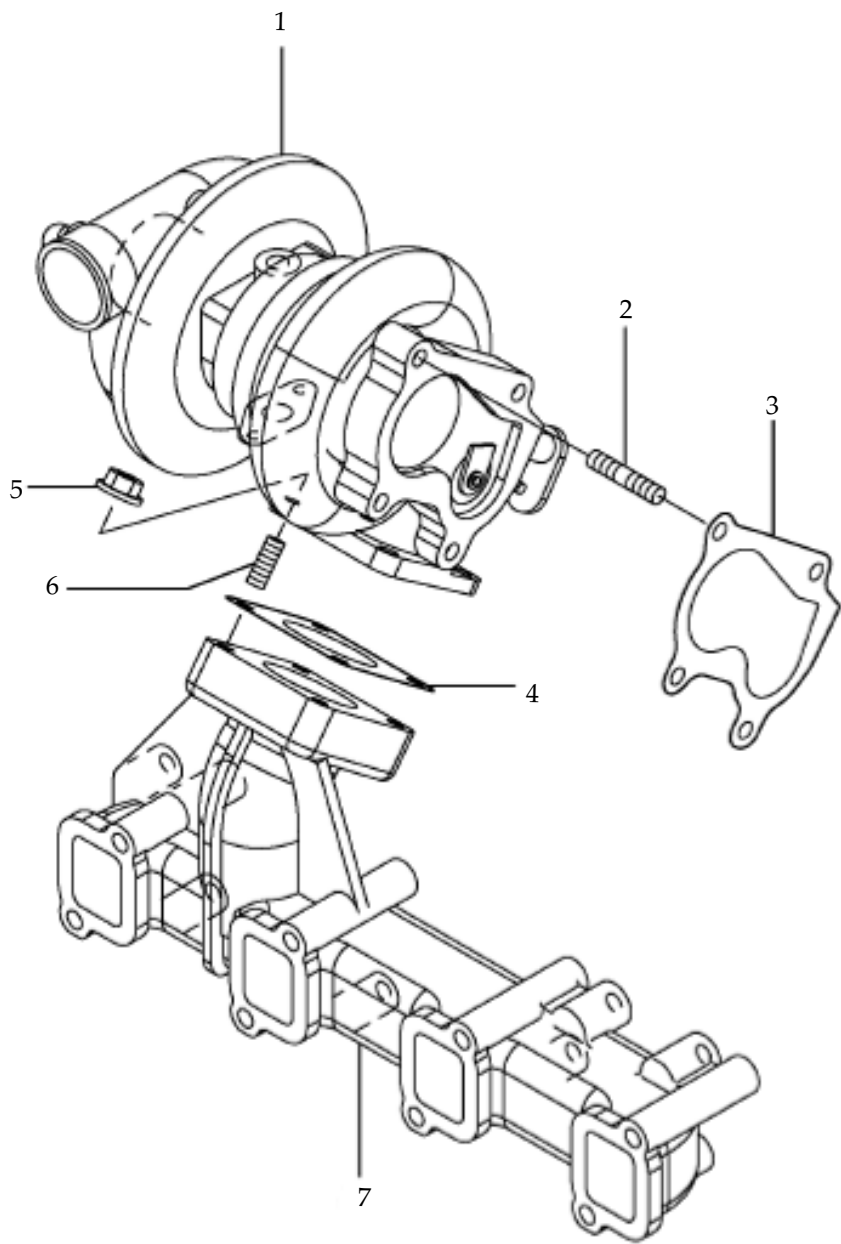
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## GEAR HOUSING – YANMAR TIER III

Item	Part Number	Qty	Description
1	24311-000070	1	O-RING 1A P7.0
2	977770-01212	3	GASKET, LIQUID
3	129900-26250	2	BALL BEARING
4	26106-080202	3	BOLT, M8 X 20 PLATED
5	26106-080452	3	BOLT, M8 X 45 PLATED
6	129908-32060	1	OIL PUMP ASSEMBLY TIER III ONLY
7	26106-080162	5	BOLT, M8 X 16 PLATED
8	129933-01500	1	GEAR HOUSING
9	26216-100302	4	STUD, BOLT
10	26306-100002	4	NUT,M10
11	24351-030750	1	PACKING, 3075
12	129900-32030	1	O-RING P20
13	129900-32040	1	O-RING P14
14	124160-01751	1	OIL FILLER CAP
15	24311-000320	1	O-RING 1A P32.0
16	129900-14140	1	BEARING #6205
17	129900-01870	1	SPONGE
18	129900-01850	1	COVER ASSEMBLY INCLUDES ITEM 17
19	26106-080402	10	BOLT M8 X 40 PLATED
20	129900-01740	1	COVER, TIMING
21	26106-080702	7	BOLT, M8 X 70 PLATED
22	129916-01800	1	SEAL, OIL
23	729906-01550	1	HOUSING ASSY COVER INCLUDES ITEM 22
24	129100-01580	4	PARALLEL PIN 8 X 16

# POWER TRAIN

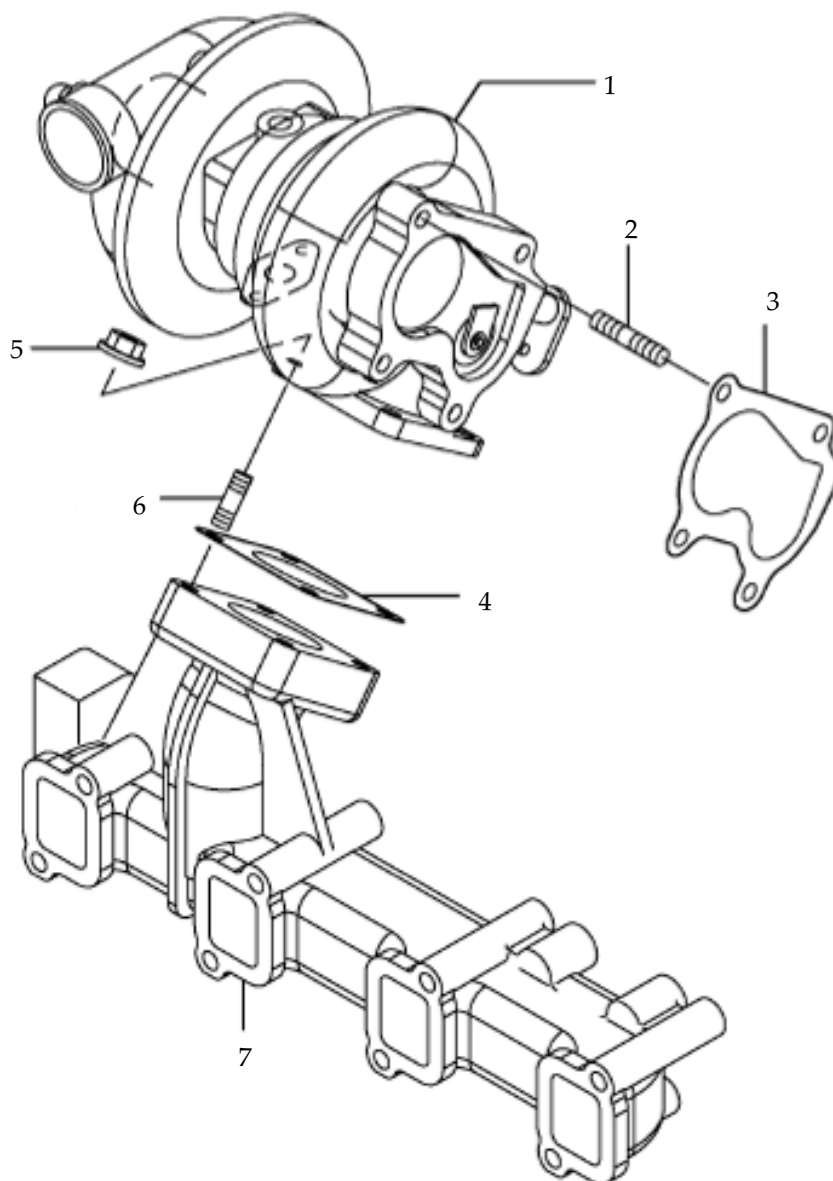
## TURBO CHARGER—YANMAR TIER II



Item	Part Number	Qty	Description
1	139935-18010	1	TURBO CHARGER
2	119131-18320	4	STUD M8X22
3	123901-18080	1	GASKET
4	129472-18090	1	GASKET
5	26306-080002	4	NUT
6	129418-18320	4	STUD BOLT M8X20
7	129935-13100	1	EXHAUST MANIFOLD

# POWER TRAIN

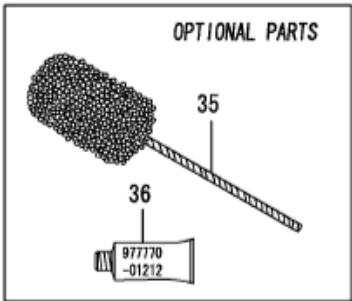
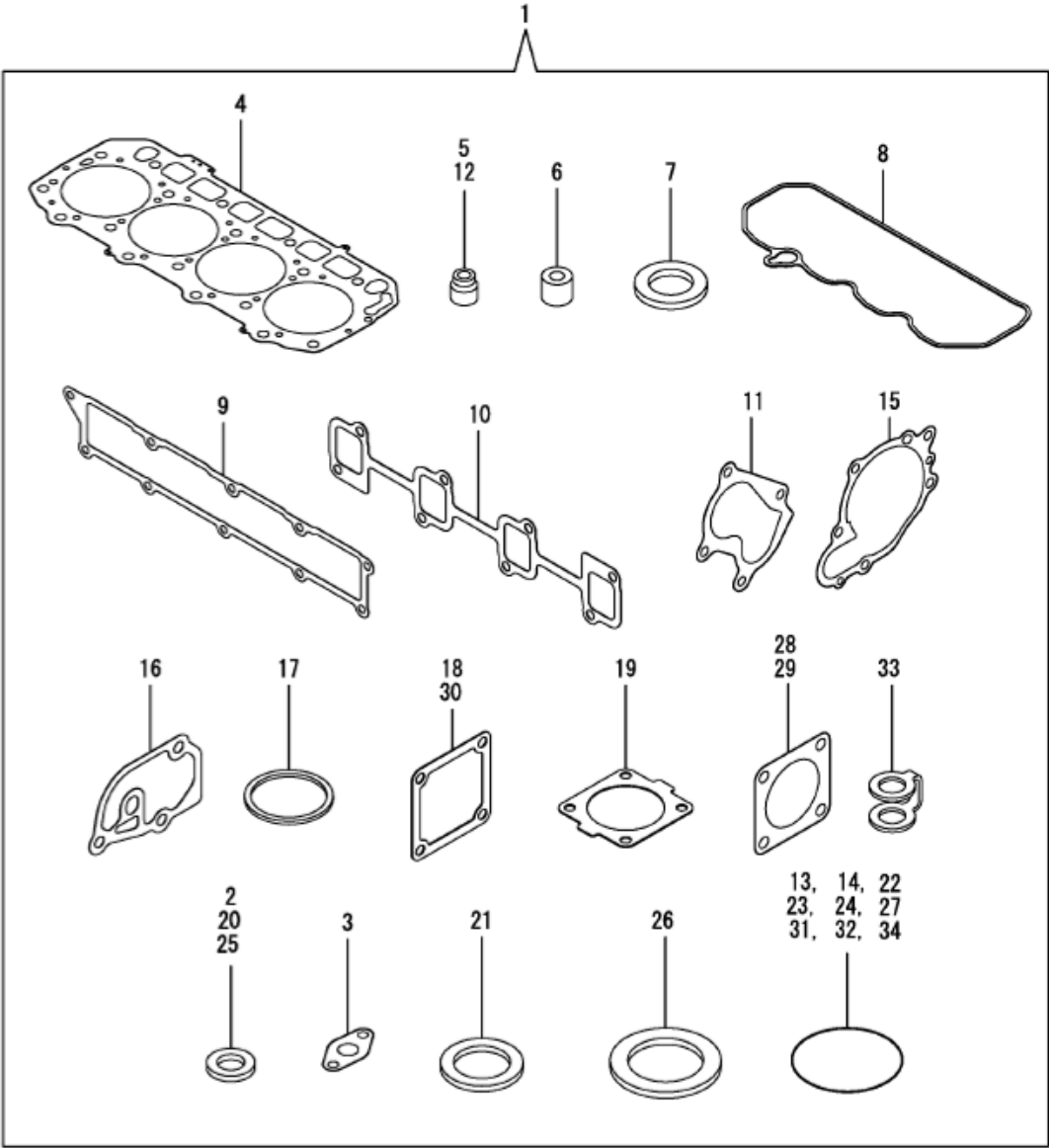
## TURBO CHARGER—YANMAR TIER III



Item	Part Number	Qty	Description
1	129935-18010	1	TURBO CHARGER
2	119131-18320	4	STUD M8X22
3	123901-18080	1	GASKET
4	129472-18090	1	GASKET
5	26306-080002	4	NUT
6	129418-18320	4	STUD BOLT M8X20
7	129928-13100	1	EXHAUST MANIFOLD

# POWER TRAIN

## ENGINE GASKETS—YANMAR TIER II



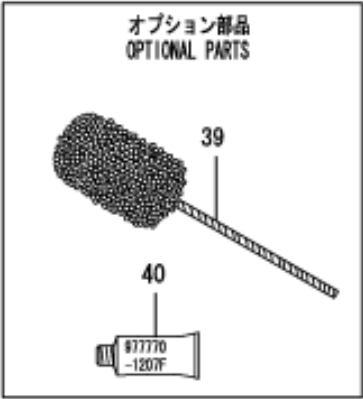
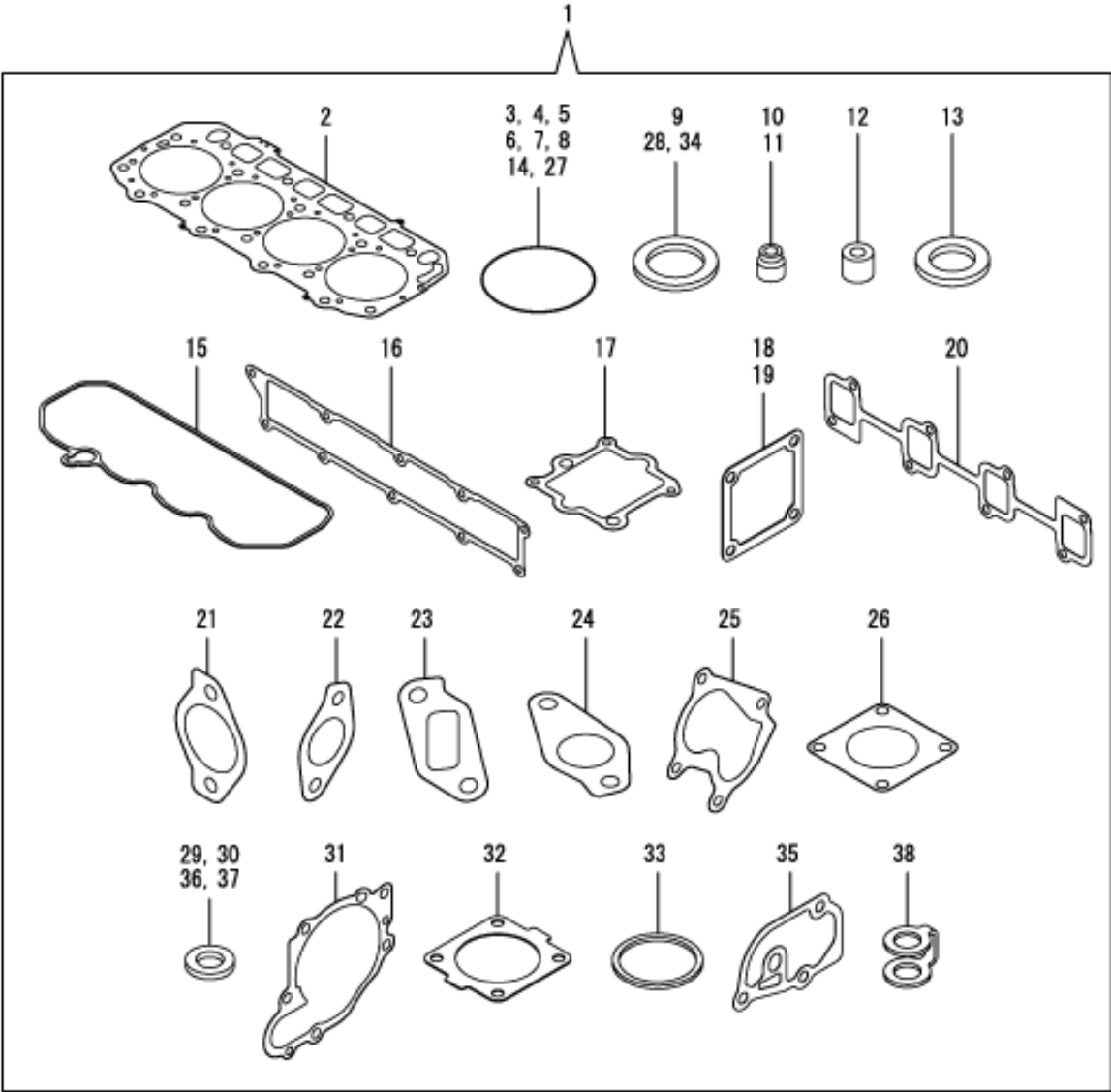
# POWER TRAIN

## ENGINE GASKETS—YANMAR TIER II

Item	Part Number	Qty	Description
1	729907-92770	1	GASKET SET
2	23414-100000	2	GASKET 10, ROUND
3	129908-39690	1	GASKET, 10.7
4	129907-01331	1	CLYLINDER HEAD GASKET
5	124160-11340	8	SEAL, VALVE STEM
6	119802-11870	4	PROTECTOR NOZZLE
7	119625-11880	4	SEAT, NOZZLE
8	129907-11310	1	HEAD COVER GASKET
9	129907-12110	1	INTAKE MANIFOLD GASKET
10	129900-13251	1	EXHAUST MANIFOLD GASKET
11	123901-18080	1	GASKET, SILENCER
12	124950-11340	8	SEAL, VALVE STEM
13	129900-32030	2	O-RING P20
14	129900-32040	1	O-RING P14
15	129900-42020	1	WATER PUMP GASKET
16	129900-49870	1	CASE GASKET
17	121850-49550	1	THERMOSTAT GASKET
18	121850-77021	1	GASKET
19	121850-49540	1	THERMOSTAT HOUSING GASKET
20	23414-080000	3	GASKET 8, ROUND
21	124465-44950	2	GASKET 16
22	24311-000070	1	O-RING 1A P7.0
23	24311-000120	8	O-RING 1A P12.0
24	24311-000320	2	O-RING 1A P32.0
25	22190-080002	11	SEAL WASHER 8S
26	22190-220002	1	SEAL WASHER 22S
27	24351-030750	1	PACKING 3075
28	129472-18090	1	GASKET
29	124240-01883	1	GASKET
30	119129-77020	1	GASKET
31	24321-000600	1	O-RING 1A G-60.0
32	24321-000850	1	O-RING 1A G-85.0
33	123907-59550	5	PACKING , FUEL RETURN
34	24341-000240	1	O-RING 1A S-24.0
35	129400-92450	1	FLEX HONE
36	977770-01212	1	GASKET, LIQUID

# POWER TRAIN

## ENGINE GASKETS—YANMAR TIER III DIESEL



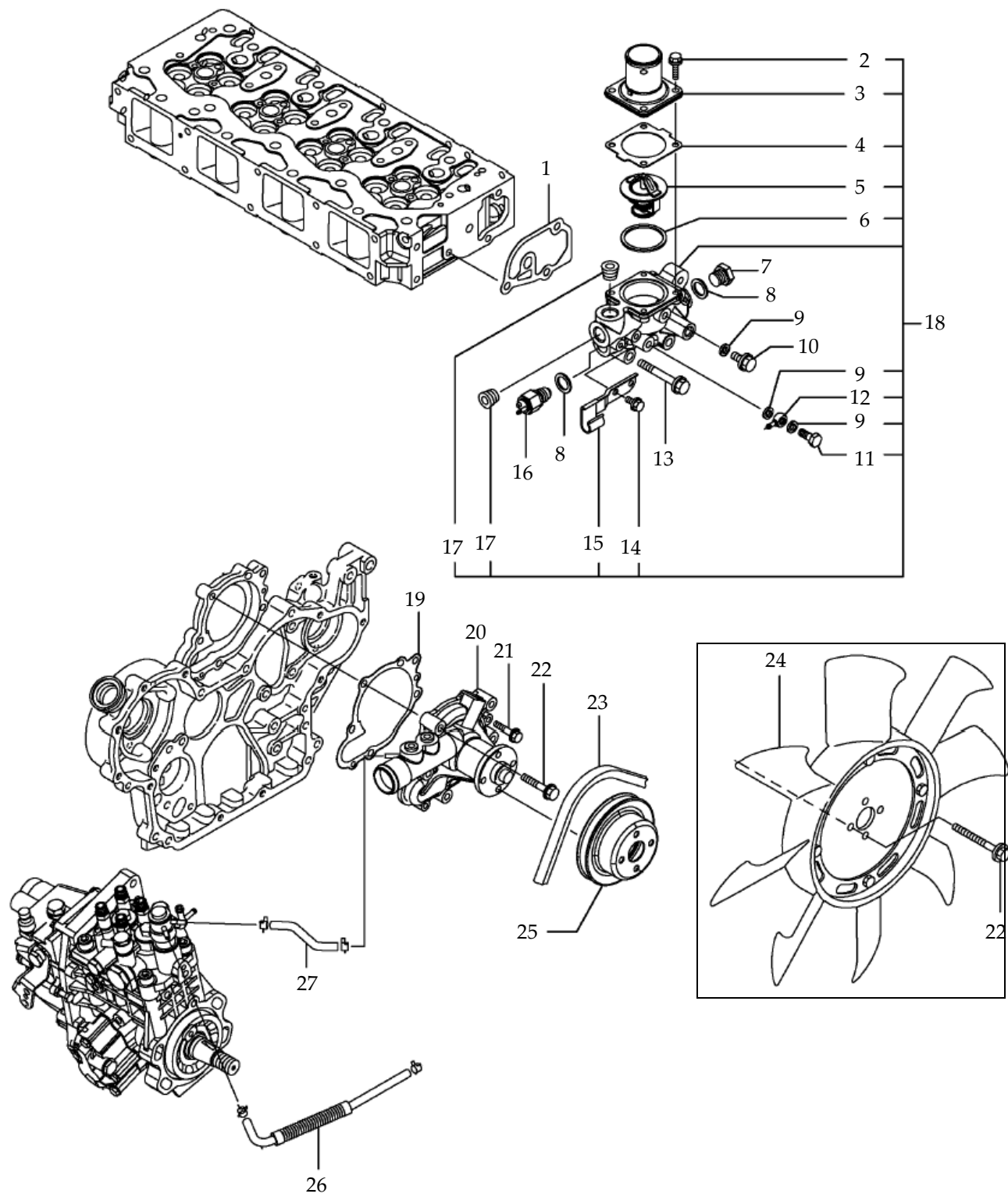
# POWER TRAIN

## ENGINE GASKETS—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	729928-92660	1	GASKET SET
2	129907-01331	1	CLYLINDER HEAD GASKET
3	129900-32030	2	O-RING P20
4	129900-32040	1	O-RING P14
5	24311-000070	1	O-RING 1A P7.0
6	24351-030750	1	PACKING 3075
7	24311-000320	2	O-RING 1A P32.0
8	24321-000850	1	O-RING 1A G85.0
9	22190-220002	1	SEAL WASHER 22S
10	119803-11340	8	SEAL, VALVE STEM
11	124160-11340	8	SEAL, VALVE STEM
12	119802-11870	4	PROTECOR NOZZLE
13	119625-11880	4	SEAT, NOZZLE
14	24311-000120	8	O-RING 1A P12.0
15	129933-11310	1	GASKET, HEAD COVER
16	129907-12110	1	GASKET, INTAKE MANIFOLD
17	129928-13720	1	GASKET
18	119129-77020	1	GASKET
19	121850-77021	1	GASKET
20	129900-13251	1	GASKET, EXHAUST MANIFOLD
21	129928-13410	2	GASKET, COOLER
22	129927-13810	1	GASKET, PIPE
23	129927-13910	1	GASKET
24	129927-13920	1	GASKET
25	123901-18080	1	PACKING, TURBINE OUT
26	129472-18090	1	GASKET
27	24321-000600	1	O-RING 1A G-60.0
28	22190-080002	11	SEAL WASHER 8S
29	23414-100000	2	GASKET 10, ROUND
30	129908-39690	1	GASKET, PIPE
31	129900-42020	1	WATER PUMP GASKET
32	121850-49540	1	GASKET, THERMOSTAT
33	121850-49550	1	GASKET, THERMOSTAT
34	22190-120002	1	SEAL WASHER 12
35	129900-49870	1	GASKET, CASE
36	23414-080000	1	GASKET 8 ROUND
37	124465-44950	2	GASKET 16
38	123907-59550	5	PACKING
39	129400-92450	1	FLEX HONE
40	977770-1207F	1	GASKET, LIQUID

# COOLING SYSTEM

## ENGINE COOLING SYSTEM—YANMAR TIER II DIESEL





# COOLING SYSTEM

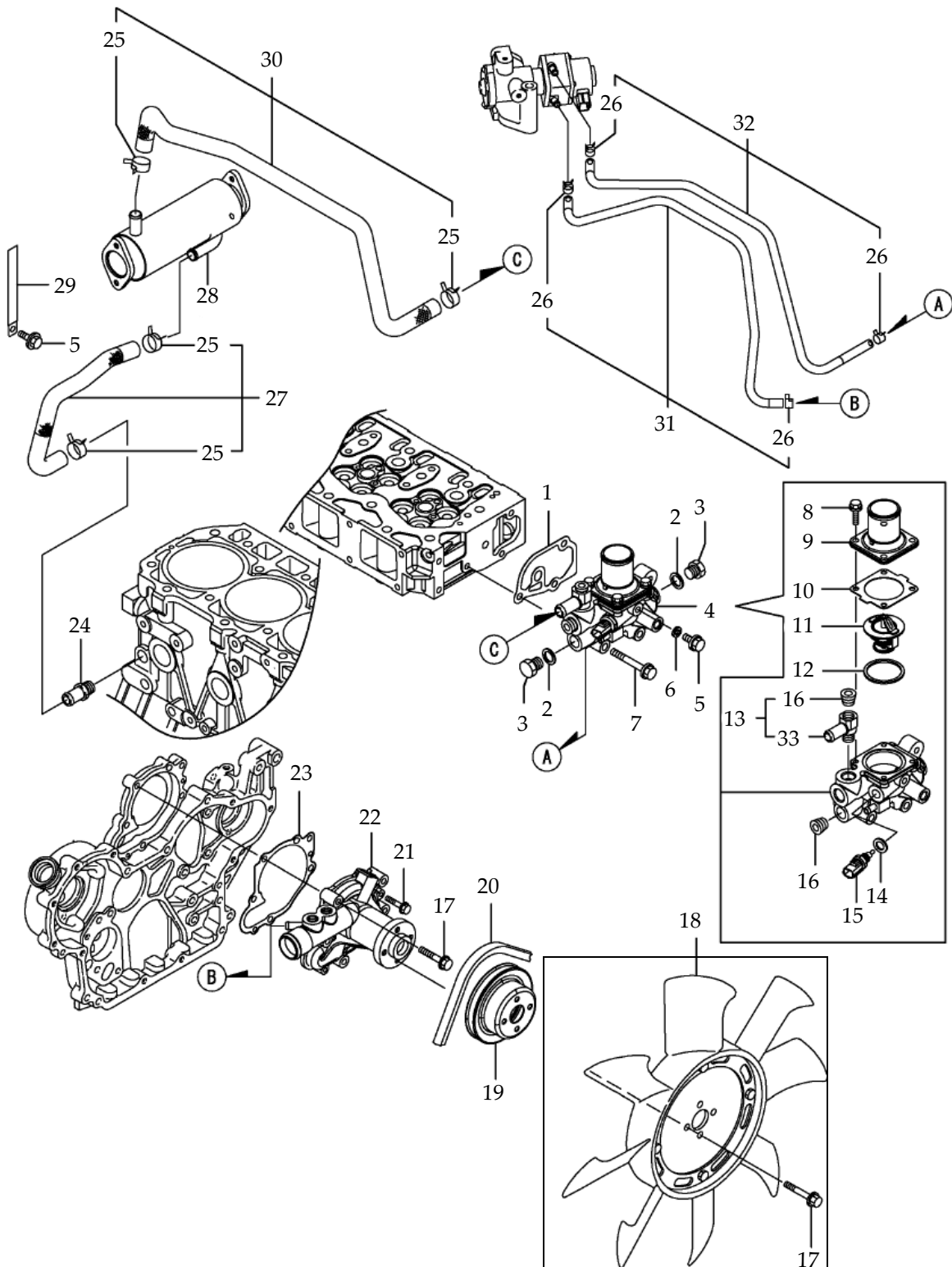
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## ENGINE COOLING SYSTEM—YANMAR TIER II DIESEL

Item	Part Number	Qty	Description
1	129900-49870	1	GASKET, CASE
2	26106-060202	4	BOLT M6 X 20 PLATED
3	129916-49530	1	THERMOSTAT HOUSING
4	121850-49540	1	GASKET, THERMOSTAT HOUSING
5	121850-49811	1	THERMOSTAT
6	121850-49550	1	THERMOSTAT GASKET
7	121450-42450	1	PLUG M16
8	124465-44950	2	GASKET
9	23414-080000	3	GASKET
10	26106-080122	1	BOLT, M8 X 12 PLATED
11	105582-59150	1	BOLT, PIPE JOINT
12	23387-040800	1	JOINT
13	26106-080602	3	BOLT, M8 X 60 PLATED
14	26106-060122	2	BOLT, M6 X 12 PLATED
15	129907-49730	1	BRACKET
16	121250-44901	1	TEMPERATURE SWITCH
17	323-094	1	TEMPERATURE SENDER
18	129907-49800	1	COMPLETE THERMOSTAT ASSY
19	129900-42020	1	GASKET, WATER PUMP
20	129907-42000	1	WATER PUMP
21	26106-060302	2	BOLT, M6 X 30 PLATED
22	26106-080552	9	BOLT, M8 X 55 PLATED
23	25132-004150	1	V-BELT
24	A-TT8-00312	1	FAN
25	A-TT10-00353	1	WATER PUMP SHEAVE
26	129907-49610	1	PIPE A, COOLING WITH CLAMPS
27	129907-49620	1	HOSE B ASSEMBLY, WATER
28	A-TT8-00362	1	REMOTE FAN BELT (NOT SHOWN)

# COOLING SYSTEM

## ENGINE COOLING SYSTEM—YANMAR TIER III DIESEL



# COOLING SYSTEM

## ENGINE COOLING SYSTEM—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	129900-49870	1	GASKET, CASE
2	124465-44950	2	GASKET
3	121450-42450	2	PLUG M16
4	129928-49800	4	THERMOSTAT ASSY INCL ITEMS 8-16 & 34
5	26106-080122	2	BOLT, M8 X 12 PLATED
6	23414-080000	1	GASKET
7	26106-080602	3	BOLT, M8 X 60 PLATED
8	26106-060202	4	BOLT, M6 X 20 PLATED
9	129916-49530	1	THERMOSTAT HOUSING
10	121850-49540	1	GASKET, THERMOSTAT HOUSING
11	121850-49811	1	THERMOSTAT
12	121850-49550	1	GASKET, THERMOSTAT
13	129928-49400	1	JOINT ASSY INCL ITEM 16 & 34
14	22190-120002	1	SEAL WASHER 12
15	129927-44900	1	TEMP SENDING UNIT TIER III ONLY
16	23875-030000	2	PLUG PT 3/8 STEEL
17	26106-080552	9	BOLT, M8 X 55 PLATED
18	A-TT8-00312	1	COOLING FAN
19	A-TT10-00353	1	WATER PUMP SHEAVE
20	25132-004150	1	V-BELT
21	26106-060302	2	BOLT, M6 X 30 PLATED
22	129927-42000	1	WATER PUMP
23	129900-42020	1	GASKET, WATER PUMP
24	129928-49420	1	JOINT
25	129960-03990	4	HOSE CLIP
26	23080-012000	4	CLAMP #12
27	129948-49610	1	WATER PIPE ASSY INCL ITEM 26
28	129928-13400	1	COOLER, ERG
29	129928-79700	1	CLIP
30	129948-49620	1	WATER PIPE ASSY INCL ITEM 26
31	129927-49610	1	WATER PIPE A, INCL ITEM 27
32	129927-49620	1	WATER PIPE ASSY INCL ITEM 27
33	129928-49410	1	JOINT

# COOLING SYSTEM

## ENGINE COOLING SYSTEM YANMAR TIER II & TIER III

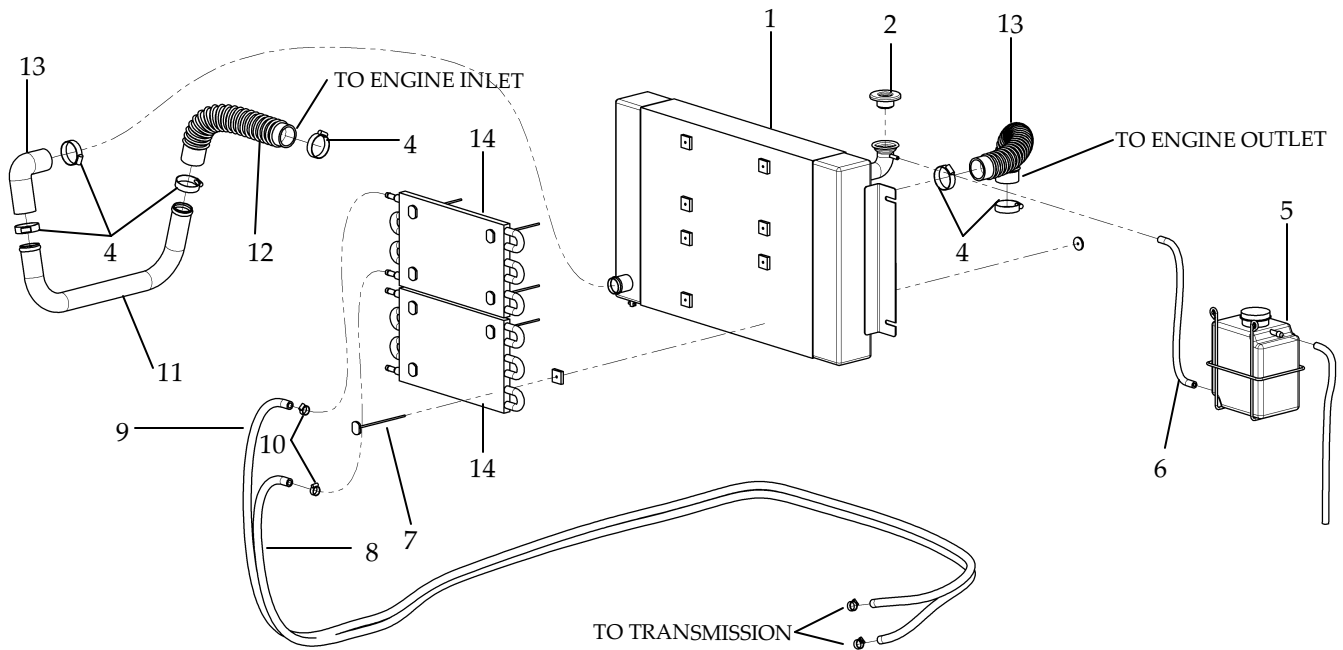
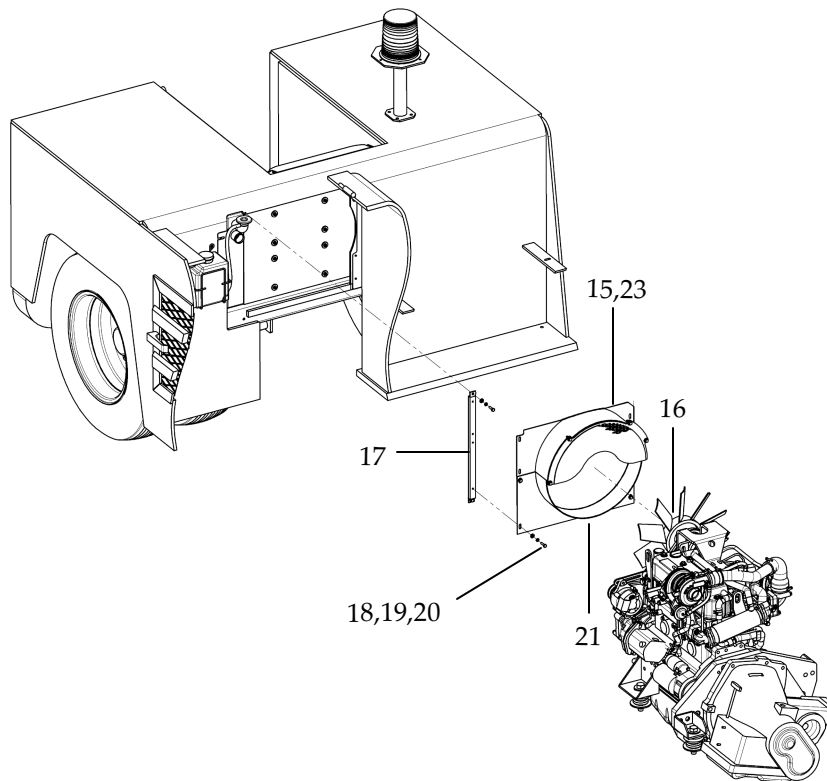


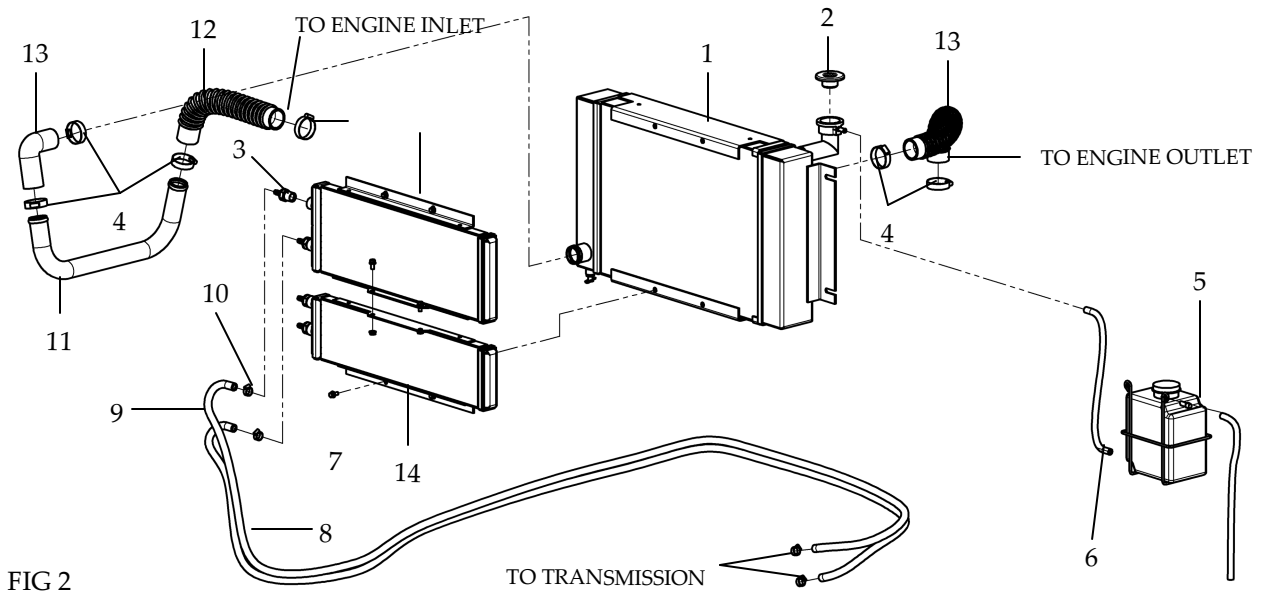
FIG 1



\*Fig 1 denotes tugs with copper radiator and coolers and Fig 2 denotes tugs with aluminum radiators and coolers. When ordering parts please specify which type of radiator is in your tug.

# COOLING SYSTEM

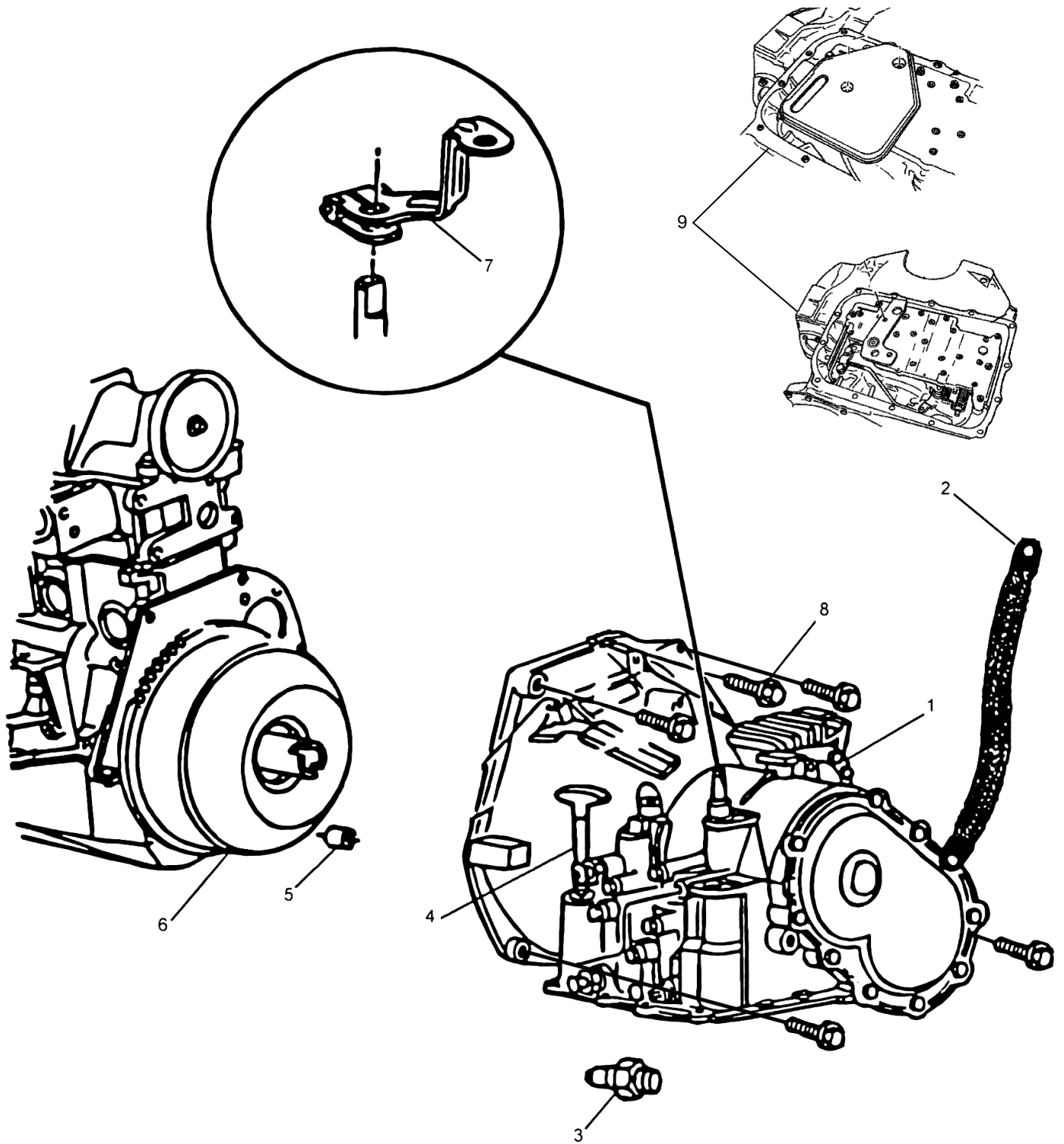
## ENGINE COOLING SYSTEM YANMAR TIER II & TIER III



Item	Part Number	Qty	Description
1	B-TT10TD-00311-2*	1	RADIATOR
2	A-USAT5-00330	1	RADIATOR CAP
3	10506B-108	4	FITTING PUSH ON END 06 TO 1/2M USED WITH ALUMINUM RADIATOR ONLY
4	NPN	8	# 24 HOSE CLAMP
5	A-TT10TD-00322	1	SURGE TANK
6	H10106	1	3/8 X 80 INCH HOSE
7	1040	8	TRANS COOLER MOUNTS
8	H10106	1	3/8 X 80 INCH HYDRAULIC HOSE WK PSI 350
9	H10106	1	3/8 X 80 INCH HYDRAULIC HOSE WK PSI 350
10	NPN	4	#4 HOSE CLAMP
11	A-TT10-00320	1	COOLANT OUTLET PIPE
12	A-TT10-00323-1	1	RADIATOR HOSE
13	A-TT4-00316	1	RADIATOR HOSE
14	A-TT4-00221-1*	2	*TRANSMISSION COOLER
14A	B-TT10-00221-1*	1	TRANSMISSION COOLER-LARGE ALUMIN
14B	B-TT10-00221-2*	1	TRANSMISSION COOLER-SMALL ALUMIN
15	TT12-08-001-SA	1	RADIATOR SHROUD UPPER
16	A-TT8-00312	1	FAN
17	A-TT10-00343	2	FAN SHROUD BRACKET
18	NPN	8	1/2-20 X 3/4 G5 HCS BOLT
19	NPN	8	1/4 INCH FLAT WASHER
20	NPN	8	1/4 INCH SPLIT LOCK WASHER
21	A-TT10-00342	1	LOWER SHROUD
22	A-TT10-00314	1	SHROUD SEAL NOT SHOWN
23	TT12-08-002-SA	1	UPPER RADIATOR SHROUD GRILLE

# TRANSMISSION

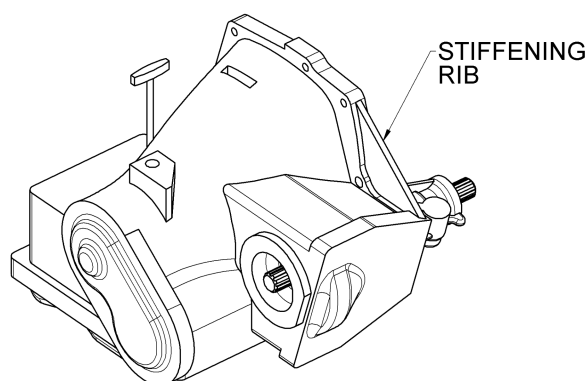
TRANSAXLE MOUNTING & MISC. PARTS (ALL TT 4-8 MODELS)



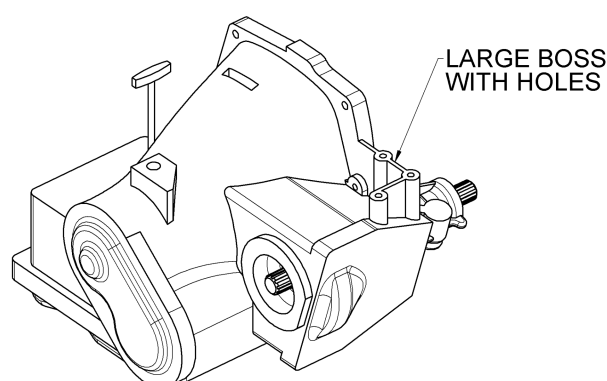
# TRANSMISSION

## TRANSAXLE MOUNTING & MISC. PARTS (ALL TT 4-8 MODELS)

Transmission identification guideline:



"OLD" 2.2/2.5L BELL HOUSING



"NEW" 2.0/2.4L BELL HOUSING

Item	Part Number	Qty.	Description
1	SEE TABLE BELOW	1	A413 TRANSMISSION
2	A-TN4-00707	1	GROUND STRAP
3	3747361	1	SWITCH - NEUTRAL SAFETY AND BACKUP LIGHT
4	4856444 (2.2/2.5)	1	DIPSTICK - TRANSMISSION FLUID
	TT08-54-002-SA (2.0/2.2)	1	DIPSTICK - TRANSMISSION FLUID
5	5240849	2	DOWEL PIN - TRANS TO ADAPTOR/ENGINE ALIGNMENT
6	SEE NOTE*	1	TORQUE CONVERTER
7	A-TT4-00419	1	TRANSAXLE SHIFT LEVER - MANUAL CONTROL
8	NPN (2.2/2.5 BOLTS)	3	BOLT, M12X1.75 X 40 SHCS, GR 12.9 (TOP OF TRANS)
		1	BOLT, M12X1.75 X 35 SHCS, GR 12.9 (VALVE BODY SIDE)
		1	BOLT, M12X1.75 X 30 SHCS, GR 12.9 (DIFFERENTIAL SIDE)
	NPN (2.0/2.4 BOLTS)	4	BOLT, M12X1.75 X 40 SHCS, GR 12.9 (ALL POSITIONS)
9	85705	1	GASKET AND FILTER MAINTENANCE PACKAGE

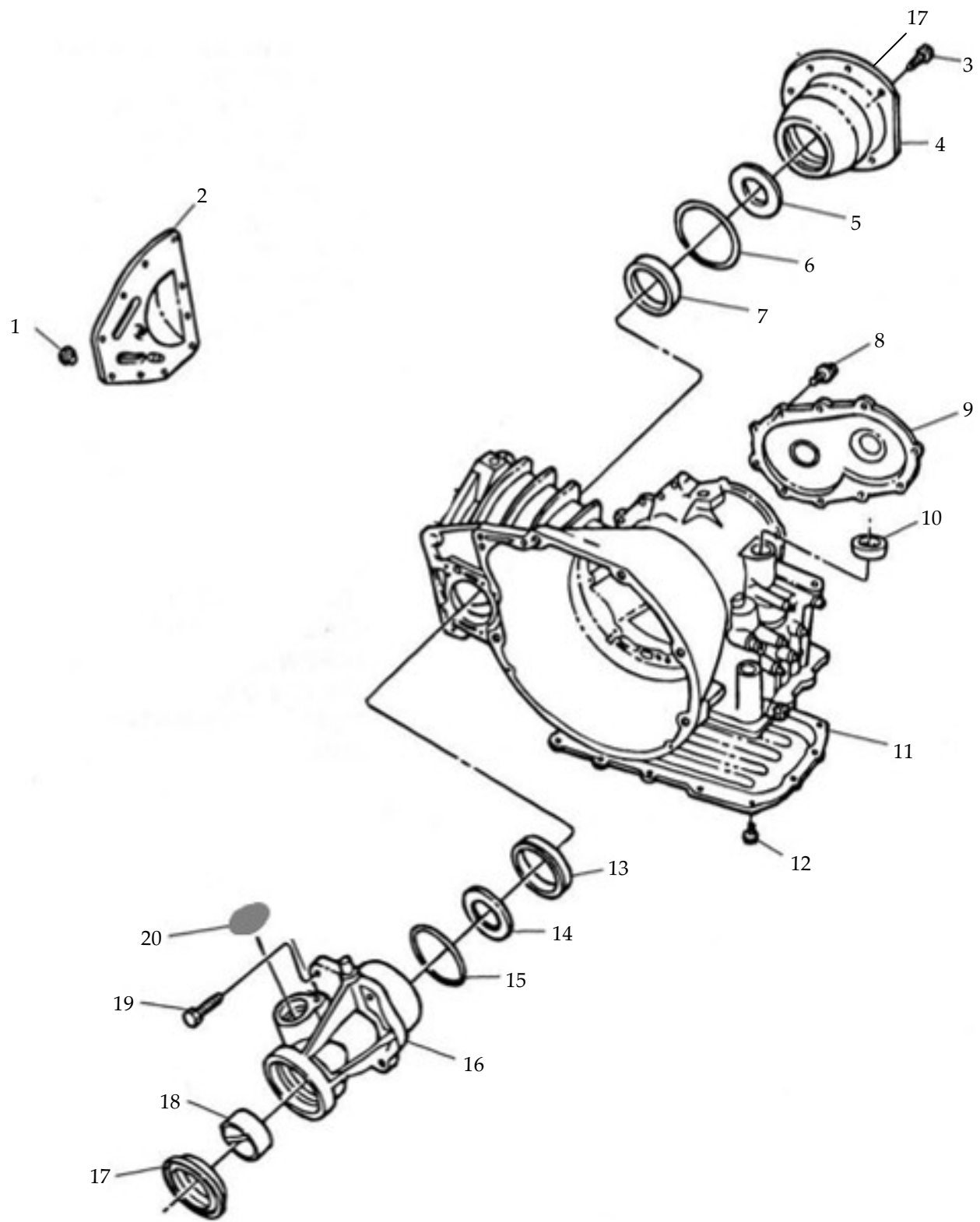
\*Torque converters may vary. Please contact Eagle for further information.

Transmission replacement kit part numbers and application guide:

Kit Number	Application
TT12-54-044-KA	TT10-12 Ford/TMDT-Diesel/Yanmar
TT12-54-045-KA	TT10-12 Isuzu

# TRANSMISSION

## TRANSAXLE CASE EXTENTION & RETAINER





# TRANSMISSION

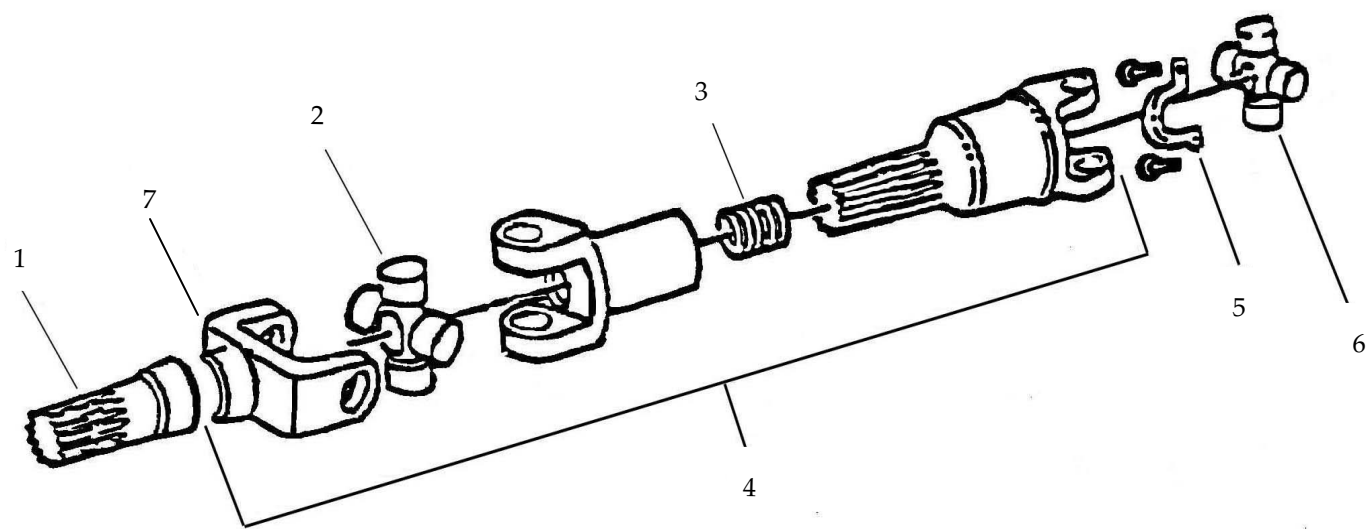
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## TRANSAXLE CASE EXTENTION & RETAINER

Item	Part Number	Qty	Description
1	6501474	10	SCREW-HEX CAP-WASH M8-1.25 X 16
2	4471573	1	PAN
3	NPN	6	SCREW, HEX CAP WASH HEAD M8-1.25 X 2
4	4567493	1	RETAINER, BEARING
5	4269787	1	RETAINER, OIL
6	4504568	1	SPACER KIT
7	NPN	1	CUP(NOT SOLD SEPARATELY)
8	6501474	10	SCREW-HEX CAP WASH M8-1.25 X 16
9	4659342	1	COVER, TRANS. END
10	3878447	1	SEAL, MANUAL VALVE SHAFT
11	4471573	1	PAN, TRANS END
12	6101285	14	SCREW-HEX CAP-WASH M6-1 X 16
13	4567022	1	CUP
14	4567494	1	RETAINER
15	6500111	1	O-RING
16	A-TT5D-00011-MOD	1	TRANS CONE
17	4412522	2	SEAL
18	NPN	1	BUSHING(SERVICED IN EXT)
19	NPN	4	SCREW, HEX CAP WASH HEAD M8-1.25 X 30
20	A-TT4-00658	1	TRANS EXP PLUG
21	85705	1	FILTER & GASKET SET (NOT SHOWN)

# DRIVELINE

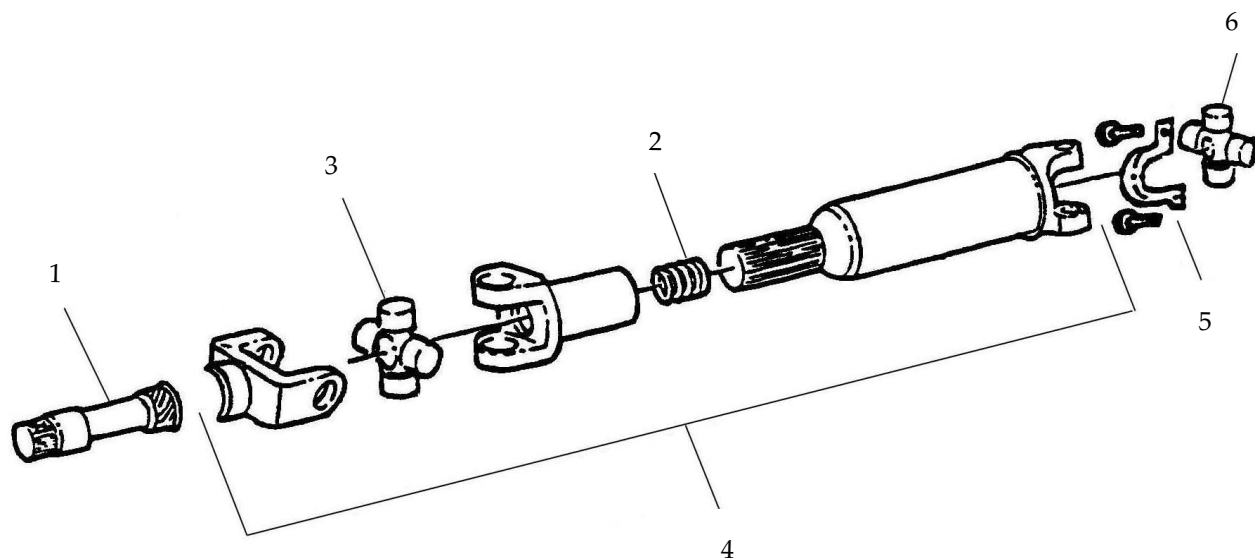
DRIVE SHAFT ASSEMBLY-FRONT



Item	Part Number	Qty.	Description
1	A-TT8-00201-1	1	TRANSMISSION OUTPUT YOKE SHAFT-FRONT
2	A-TT4-00132-1	1	CROSS BEARING FRONT D/S NEW STYLE
3	A-TT4-00134	1	DRIVE SHAFT SPRING
4	A-TT10-00202-2	1	DRIVE SHAFT
5	A-TT4-00130	2	END YOKE STRAP AND BOLT KIT
6	A-TT4-00137	1	CROSS BEARING FRONT D/S NEW STYLE
7	2-4-1921	1	END YOKE

# DRIVELINE

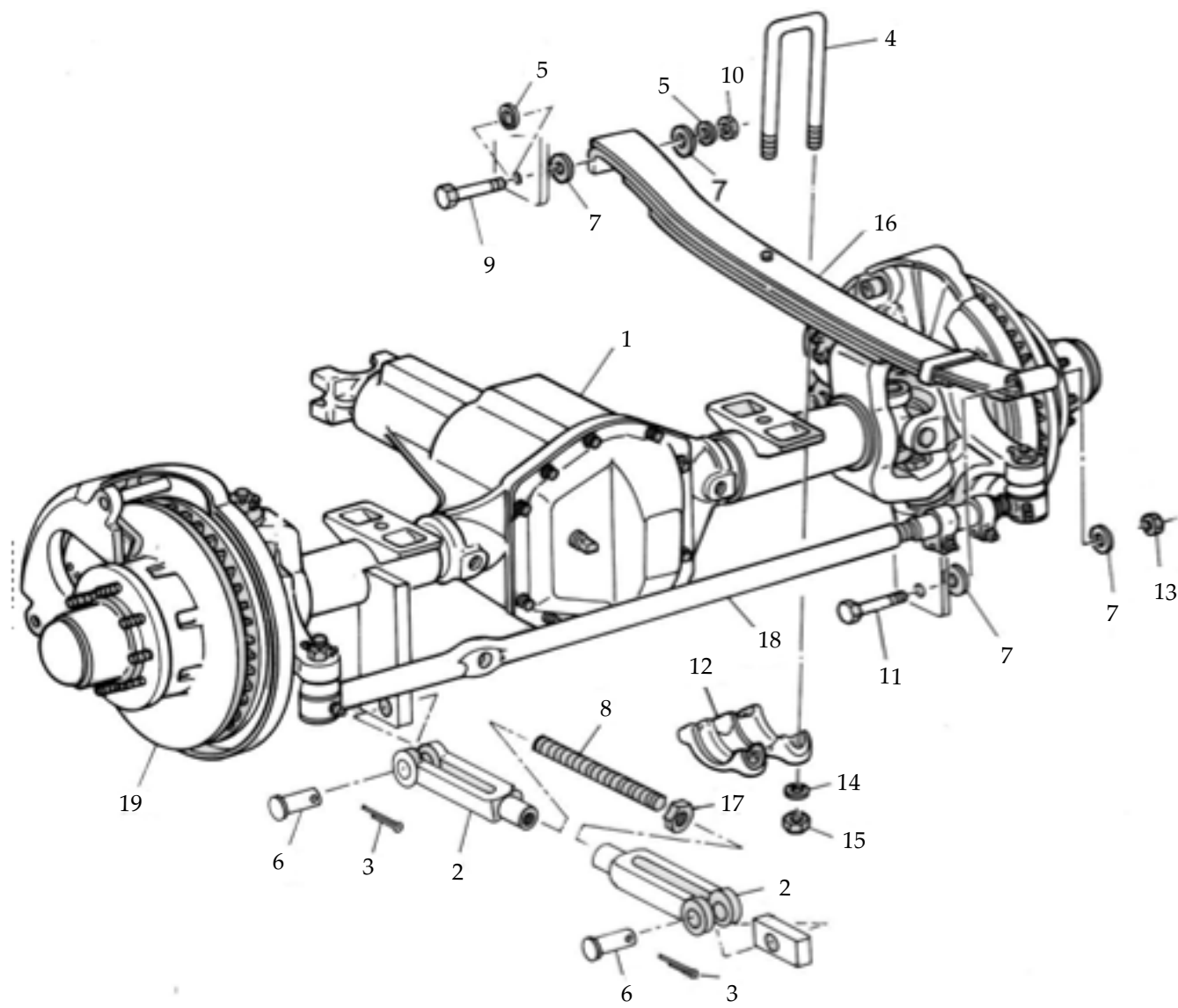
## DRIVESHAFT ASSEMBLY—REAR



Item	Part Number	Qty.	Description
1	A-TT8-00201-2	1	TRANSMISSION OUTPUT YOKE SHAFT-REAR
2	A-TT4-00134	1	DRIVE SHAFT SPRING
3	A-TT4-00132-1	1	CROSS BEARING FRONT D/S NEW STYLE
4	AB-TT10D-00130-3	1	DRIVE SHAFT
5	A-TT4-00130	2	END YOKE STRAP KIT (DUAL REAR WHEELS ONLY)
6	A-TT4-00137	1	CROSS BEARING REAR D/S NEW STYLE
7	2/4/1921	1	END YOKE

# AXLE - FRONT

AXLE ASSEMBLY—FRONT DRIVE



# AXLE - FRONT

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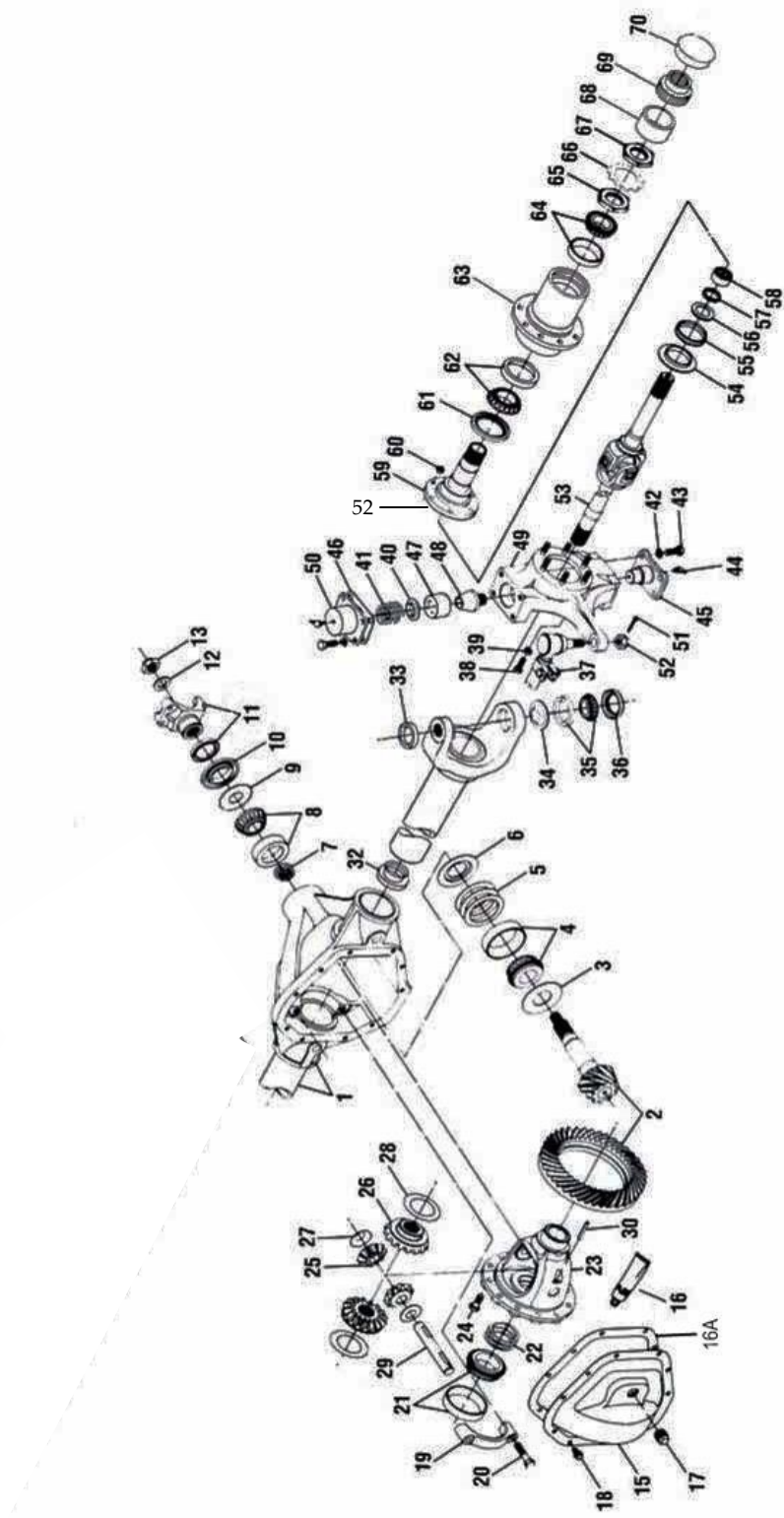
## AXLE ASSEMBLY—FRONT DRIVE

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	A-TT10-00371	1	FRONT DRIVE AXLE ASSEMBLY
2	A-TT10-00128	4	CLEVIS
3	NPN	4	COTTER PIN
4	A-TT10-00119	4	U BOLT 5/8-18 TREAD
5	NPN	4	WASHER FLAT 3/8
6	A-TT10-00129	4	CLEVIS-PIN
7	A-TT4-00119	6	WASHER-NYLON (OBSOLETED)
8	NPN	2	THREADED ROD
9	NPN	2	SCREW HEX CAP 3/8-16 X 3-1/2
10	NPN	2	NUT HEX LOCK 3/8-16
11	NPN	2	SCREW HEX CAP 9/16-18 X 3 1/2
12	A-TT10-00118	2	AXLE CLAMP PLATE
13	NPN	2	NUT HEX LOCK 9/16-18
14	A-TT4-00366	8	WASHER, U-BOLT
15	A-TT4-00365	8	NUT, U BOLT
16	A-TT10-00116	2	LEAF SPRING
17	A-TT4-00407	4	JAM NUT
18	044TR115-24X	1	TIE ROD ASSEMBLY
19	060HU109-X	2	HUB & ROTOR ASSEMBLY

\*\*INCLUDED IN U-BOLT KIT

# AXLE - FRONT

AXLE ASSEMBLY BREAKDOWN – FRONT DRIVE



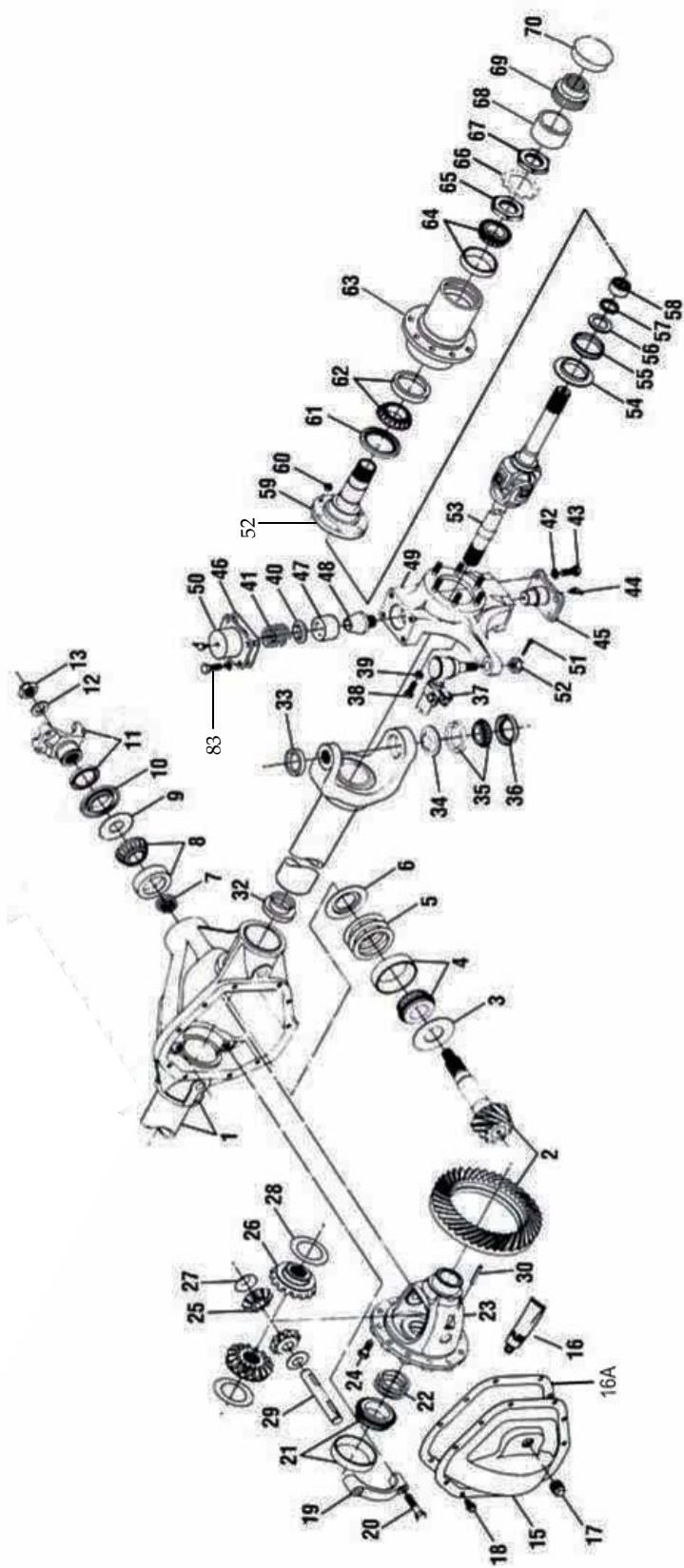
# AXLE - FRONT

## AXLE ASSEMBLY BREAKDOWN – FRONT DRIVE

Item	Part Number	Qty	Description
1	A-TT10-00371	1	COMPLETE AXLE ASSEMBLY
2	706999-14X	1	GEAR & PINION ASSEMBLY
3	SEE KIT ITEM 71 OR 72	1	SLINGER-PINION OIL INNER
4	706060X	KIT	INNER PINION BEARING
5	SEE KIT ITEM 71, 76 OR 78	KIT	SHIM-PINION ADJUSTING
6	SEE KIT ITEM 71	1	BAFFLE-PINION OIL
7	SEE KIT ITEM 71, 76 OR 78	KIT	SHIM-PINION BEARING ADJUSTING
8	706045X	KIT	OUTER PINION BEARING
9	SEE KIT ITEM 71	1	SLINGER-PINION OIL OUTER
10	35725	1	SEAL-OIL
11	345731X	1	END YOKE ASSY
12	30275	1	WASHER-PINION NUT
13	30271	1	NUT-PINION
14	39697	2	AXLE GASKET
15	73591X	1	COVER - CARRIER
16	82180	1	RTV SEALANT
16A	34687	1	COVER GASKET
17	36472	1	PLUG-PIPE SQ DRIVE
18	34822	10	SCREW-FLANGE HD
19	NOT SOLD SEPERATELY	2	CAP DIFFERENTIAL BEARING
20	500400-20	2	1/2-13 X 2.25 GRD8 HEX BOLT
21	706047X	KIT	DIFFERENTIAL BEARING
22	SEE KIT ITEM 71, 76 OR 78	KIT	DIFFERENTIAL SHIM
23	706625X	1	CASE-DIFFERENTIAL ASSY(STANDARD)
24	30266	10	SCREW-HEX
25	SEE KIT ITEM 73	2	PINION-DIFFERENTIAL
26	SEE KIT ITEM 73	2	GEAR-DIFFERENTIAL KIT
27	SEE KIT ITEM 73	2	THRUST WASHER DIFFERENTIAL PINION
28	SEE KIT ITEM 73	2	THRUST WASHER DIFFERENTIAL GEAR
29	SEE KIT ITEM 73	1	SHAFT-DIFFERENTIAL
30	500598-22	1	PIN-ROLL
31	16979	1	VENT PLUG
32	37275	2	SEAL & GUIDE-SHAFT
33	SEE KIT ITEM 81	2	SEAL-KING PIN
34	SEE KIT ITEM 81	2	RETAINER
35	SEE KIT ITEM 81	2	BEARING KING PIN
36	41777	1	OIL SEAL
37	044TR115-24X	2	TIE ROD ASSY

# AXLE - FRONT

AXLE ASSEMBLY BREAKDOWN – FRONT DRIVE CONT.





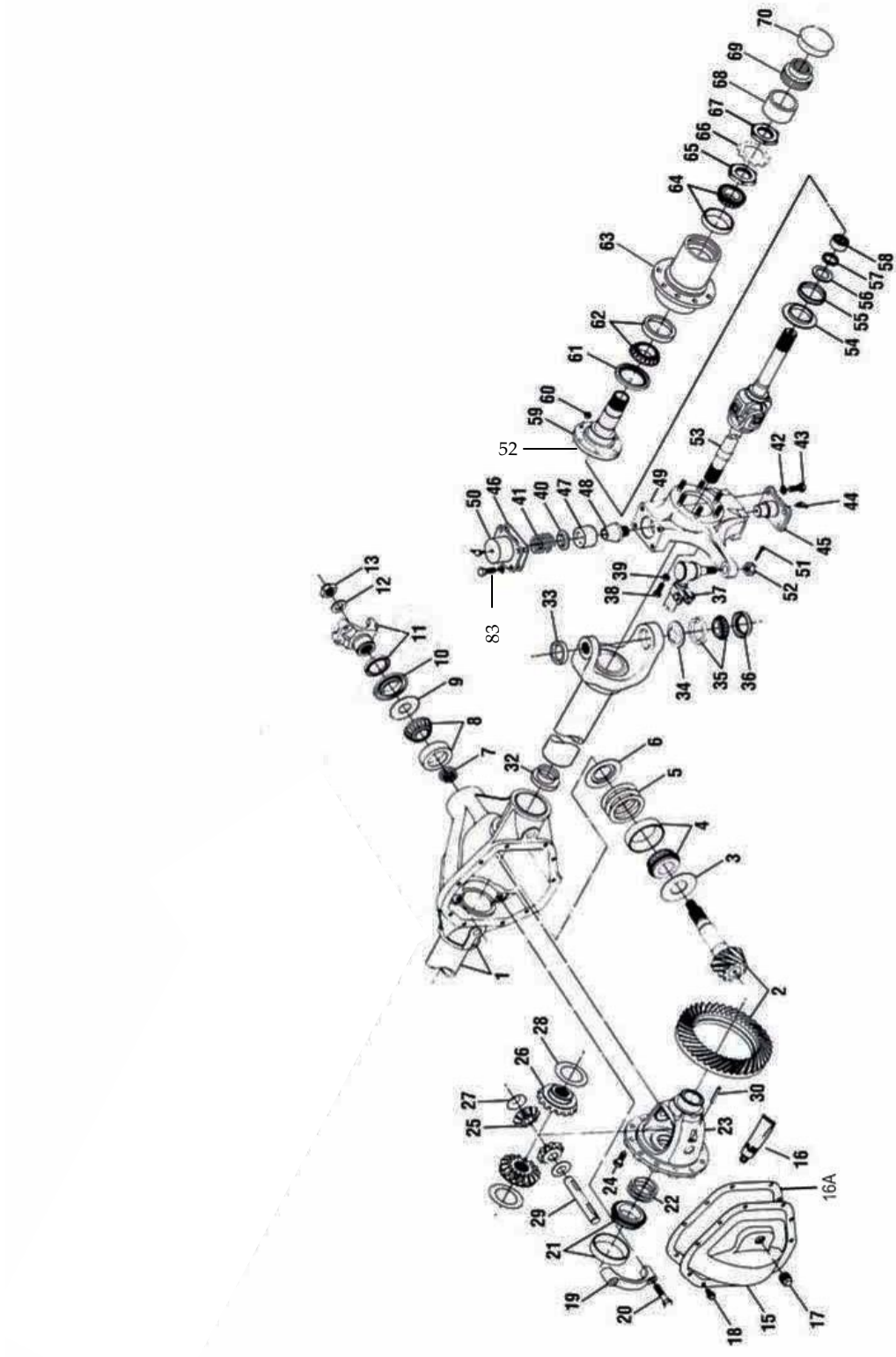
# AXLES - FRONT

## AXLE ASSEMBLY BREAKDOWN – FRONT DRIVE CONT.

Item	Part Number	Qty	Description
38	31026-3	2	BOLT STOP
39	05QE	2	JAM NUT
40	620180	2	RETAINER- COMPRESSION SPRING
41	37300	2	COMPRESSION SPRING
42	500357-13	8	LOCK WASHER
43	500412-12	8	BOLT-KING PIN BEARING CAP
44	500175-1	2	FITTING - LUBRICATION
45	37299	2	KING PIN CAP FIN
46	37307	2	GASKET-KING PIN CAP
47	41886	2	BUSHING - KING PIN
48	37302	2	KING PIN
49	73948-X	1	(3)RIGHT HAND STEERING KNUCKLE
49	070SK193-X	1	(3)LEFT HAND STEERING KNUCKLE
50	620132	2	CAP - KING PIN
51	500024-5	2	COTTER PIN
52	34800	2	NUT
53	907967-5	2	(1) SHAFT AND JOINT ASSY 30 TOOTH
53	909218-7	2	(1) SHAFT AND JOINT ASSY 35 TOOTH
54	37308	2	SLINGER
55	37311	2	OIL SEAL
56	SEE KIT ITEM 79 OR 80	2	SPACER
57	SEE KIT ITEM 79 OR 80	2	SEAL
58	SEE KIT ITEM 79 OR 80	2	BEARING ASSY - NEEDLE
59	SEE KIT ITEM 79	2	WHEEL BEARING SPINDLE ASSY
60	36880	12	SPINDLE NUT
61	37729	2	SEAL
62	706411X	2	INNER WHEEL BEARING
63	060HU109-X	2	WHEEL HUB
64	706074X	2	OUTER WHEEL BEARING
65	35270	2	NUT
66	35269	2	LOCK-WHEEL BEARING ADJUSTING NUT
67	35270	2	NUT
68	37997	2	SPACER - DRIVE GEAR
69	620861	2	GEAR - DRIVE 35 TOOTH
69	37994	2	GEAR - DRIVE 30 TOOTH
70	37996	2	HUB CAP

# AXLE - FRONT

AXLE ASSEMBLY BREAKDOWN – FRONT DRIVE CONT.



# AXLE - FRONT

## AXLE ASSEMBLY BREAKDOWN – FRONT DRIVE CONT.

Item	Part Number	Qty	Description
71	706999-14X	KIT	DRIVE GEAR AND PINION ASSY INCLUDES ITEMS 2-10, 12,13,16,22,24
72	72162X	KIT	DRIVE GEAR AND PINION INCLUDES ITEMS 2,13
73	706602X	KIT	DIFFERENTIAL PARTS (STANDARD) INCLUDES ITEMS 16,24-30
74	706601X	KIT	DIFFERENTIAL PARTS (LIMITED SLIP) INCLUDES ITEMS 16,24,74-81
75	706354X	KIT	DIFFEREN. DISC & PLATES(LIMITED SLIP) INCLUDES ITEMS 78-81
76	706603X	KIT	PINION AND BEARING ADJUSTING SHIMS INCLUDES ITEMS 5,7,12,13,16
77	706604X	KIT	DIFFERENTIAL ADJUSTING SHIMS INCLUDES ITEMS 16,22
78	706605X	KIT	DIFFERENTIAL AND PINION SHIMS INCLUDES ITEMS 5,7,12,13,16,22
79	700013	KIT	SPINDLE ASSY INCLUDES ITEMS 55-59
80	700014	KIT	SPINDLE SEAL & BEARING KIT INCLUDES ITEMS 55-58
81	660202-38	KIT	GEAR COVER ASSY INCLUDES ITEMS 15-18
82	706395X	KIT	KING PIN PARTS KIT INCLUDES ITEMS 33-36
83	500412-12	4	BOLT 1/2-20 X 2.25

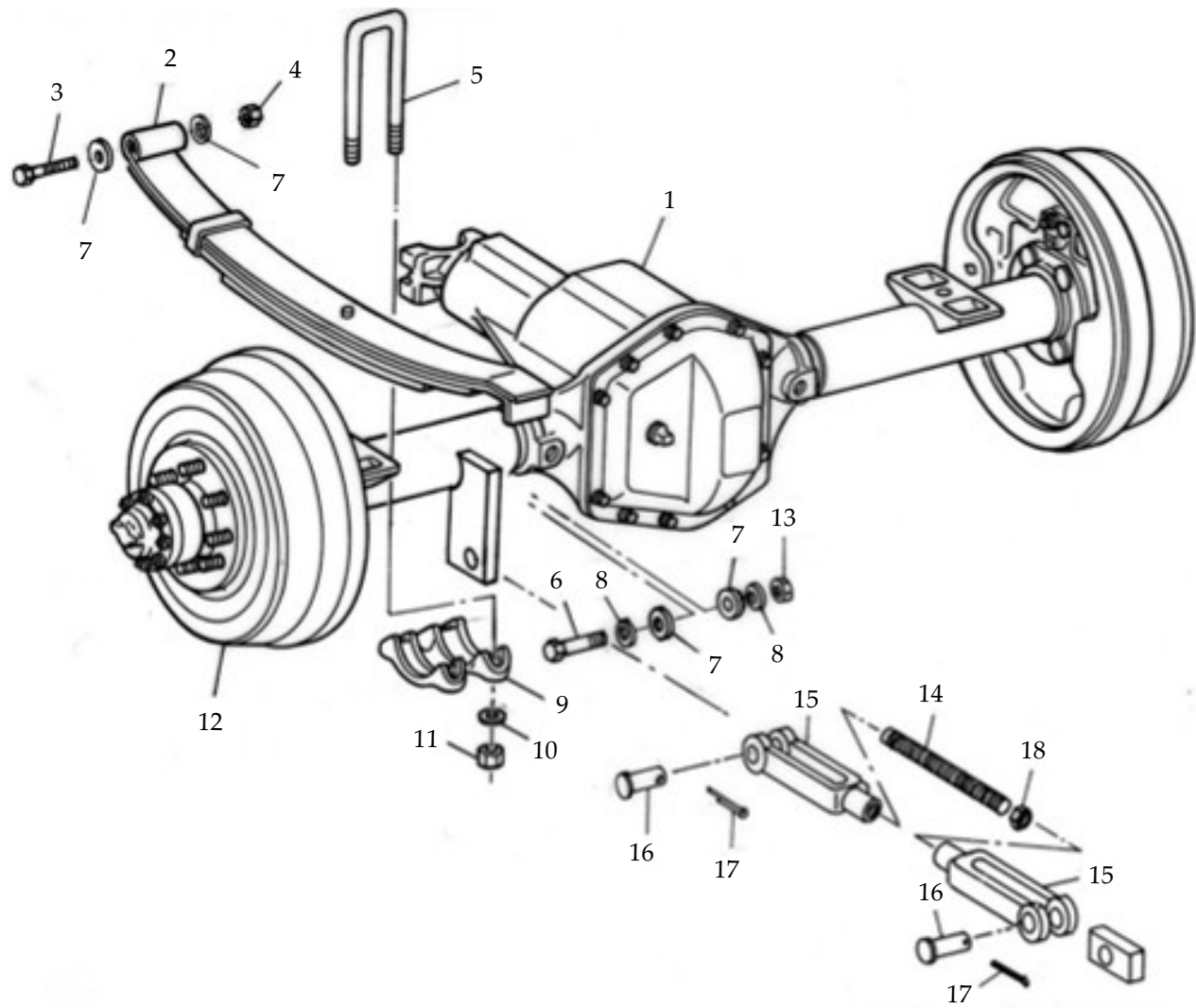
(1) Due to engineering change by Dana axles. Your tug may have either a 30 or 35 tooth shaft and joint assembly. All tugs with continental engines will have 909218-7 (35 tooth). It may be necessary for you to count the teeth on your shaft and joint assembly to correctly identify the part you require.

(2) Note—If cotter pin cannot be installed after minimum torque is attained, the nut must be advanced until cotter pin can be installed.

(3) When replacing steering knuckles be sure that upon installation your steering cylinders (see pages 48-51) must be adjusted so when in full turn to the right and then full turn to the left the cylinder does not pull steering arm more than 3/16 of an inch. If you have any questions please call Eagle Tugs technical department.

# AXLE - REAR

AXLE ASSEMBLY—REAR DRIVE



# AXLE - REAR

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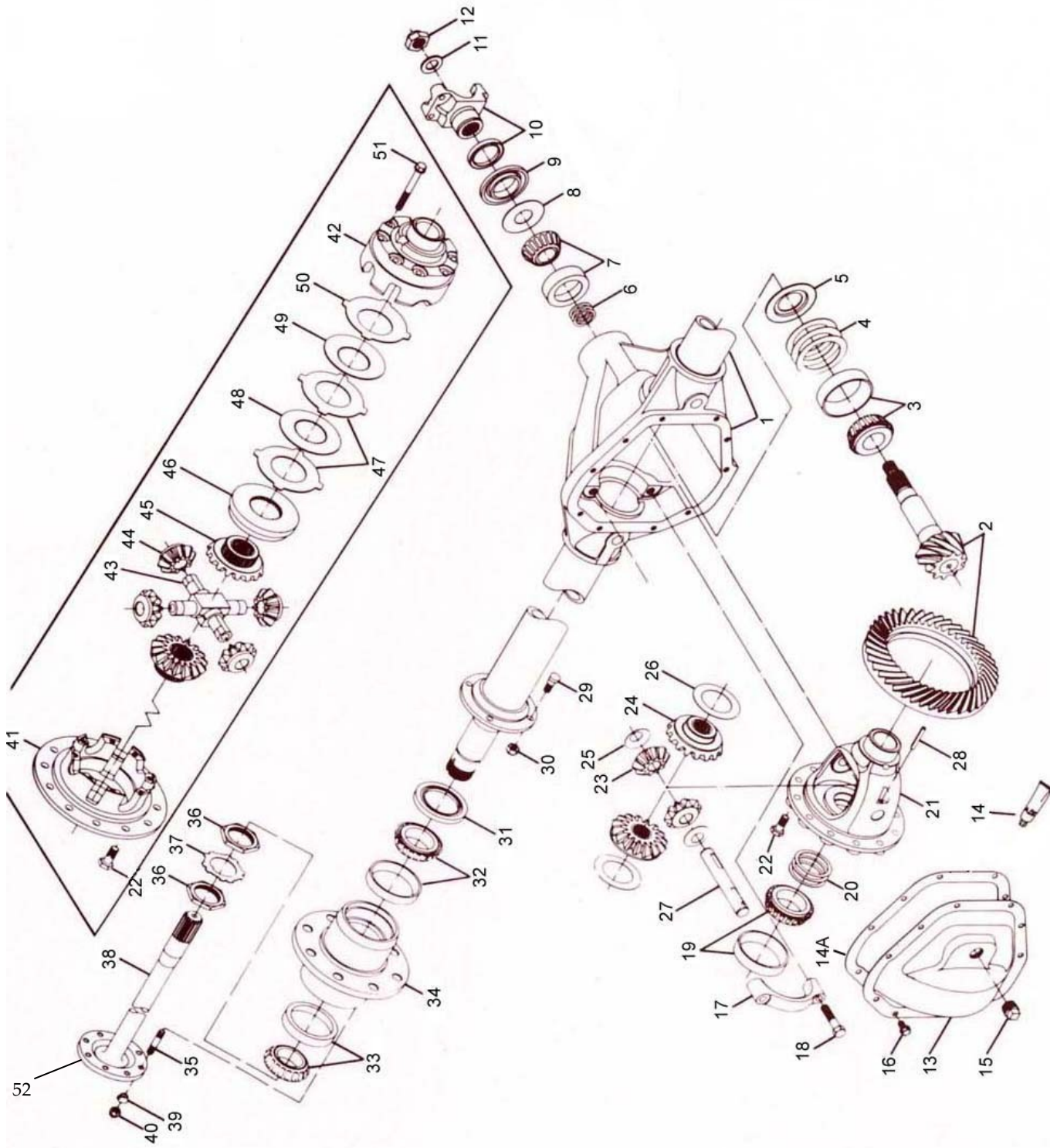
## AXLE ASSEMBLY—REAR DRIVE

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	A-TT10-00361	1	AXLE ASSEMBLY REAR DRIVE (DUALY)
1	A-TT10-00361-1	1	AXLE ASSEMBLY REAR DRIVE (SINGLE WHEEL)
2	A-TT10-00116	2	LEAF SPRING
3	NPN	2	SCREW-HEX CAP 9/16-18 X 3 1/2 GR8
4	NPN	2	NUT-LOCK 9/16-18
5	A-TT10-00119	4	U-BOLT 5/8-18 THREAD (DUALY)
5	A-TT10-00119-1	4	U-BOLT 5/8-18 THREAD (SINGLE WHEEL)
6	NPN	4	SCREW-HEX CAP 3/8-16 X 2-1/2
7	A-TT4-00119	6	WASHER-NYLON (OBSOLETED)
8	NPN	4	WASHER-FLAT 3/8
9	A-TT4-00363	2	AXLE CLAMP PLATE (DUALY)
9	TT12-04-002-SA	2	AXLE CLAMP PLATE (SINGLE WHEEL)
10	A-TT4-00366	8	WASHER FLAT SPECIAL 3/16" THICK
11	A-TT4-00365	8	NUT-HEX-HIGH SPECIAL 5/8-18
12	070HU247X	2	BRAKE DRUM-REAR
13	NPN	2	NUT-HEX-LOCK 3/8-16
14	NPN	2	THREADED ROD
15	A-TT10-00128	4	CLEVIS
16	A-TT10-00129	4	CLEVIS PIN
17	NPN	4	COTTER PIN
18	A-TT4-00407	4	JAM NUT

\*\*INCLUDED IN U-BOLT KIT

# AXLE - REAR DUAL

## AXLE ASSEMBLY BREAKDOWN – REAR DRIVE



# AXLE - REAR DUALY

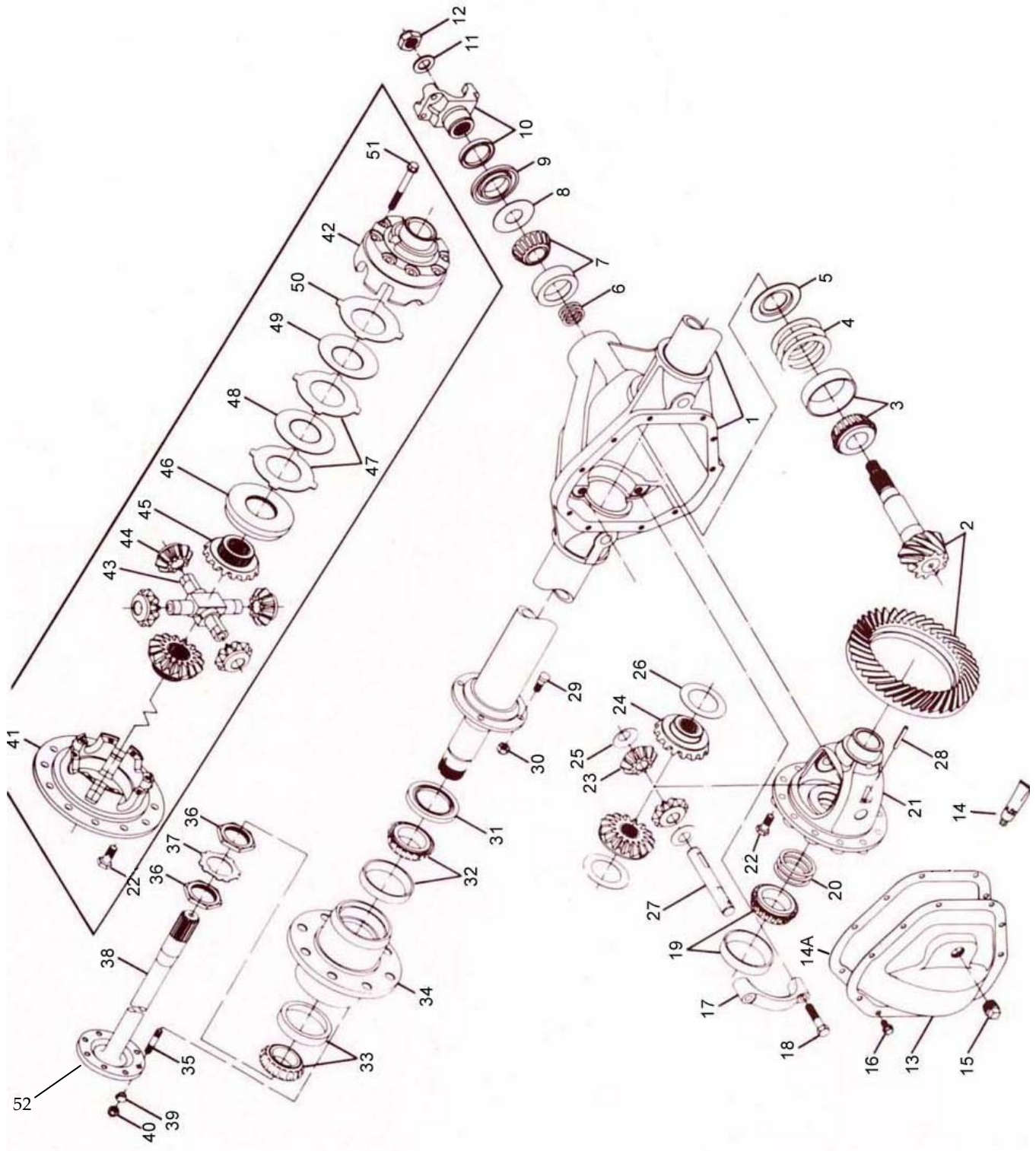
## AXLE ASSEMBLY BREAKDOWN – REAR DRIVE

Item	Part Number	Qty	Description
1	A-TT10-00361	1	COMPLETE AXLE ASSEMBLY
2	72165-5X	KIT	DRIVE GEAR & PINION
3	706060X	KIT	INNER PINION BEARING
4	SEE KIT ITEM 53	KIT	SHIM-DRIVE PINION ADJUSTING
5	34849	1	BAFFLE-PINION BEARING
6	SEE KIT ITEM 53	KIT	SHIM-PINION BEARING ADJUSTING
7	706045X	KIT	OUTER PINION BEARING
8	39238	1	SLINGER-PINION BEARING
9	38427	1	SEAL-PINION
10	345731X	1	END YOKE ASSEMBLY
11	30275	1	WASHER-PINION NUT
12	30271	1	NUT-PINION
13	73591-X	1	COVER ASSEMBLY
14	82180	1	RTV SEALANT
14A	34687	2	COVER GASKET
15	98785	1	PLUG-PIPE SLOTTED
16	36472	10	SCREW-FLANGE HD
17	N/A	1	CAP DIFFERENTIAL BEARING
18	500400-20	2	1/2-13 x 2.25 GRD8 BOLT BEARING CAP
19	706047X	KIT	BEARING
20	SEE KIT ITEM 55, 59 OR 62	KIT	SHIM-DIFFERENTIAL BEARING
21	SEE KIT ITEM 55	KIT	CASE-DIFFERENTIAL
22	30266	KIT	BOLT-DRIVE GEAR
23	SEE KIT ITEM 56	KIT	PINION-DIFFERENTIAL
24	SEE KIT ITEM 56	KIT	GEAR-DIFFERENTIAL
25	SEE KIT ITEM 56	KIT	THUST WASHER-PINION
26	SEE KIT ITEM 56	KIT	THRUST WASHER-GEAR
27	SEE KIT ITEM 56	KIT	SHAFT-DIFFERENTIAL
28	500598-22	1	LOCK-DIFFERENTIAL
29	33694	8	BOLT-BRAKE
30	36880	8	NUT-BRAKE
31	35256	2	SEAL-OIL
32	706073X	KIT	INNER WHEEL BEARING
33	706074X	KIT	OUTER WHEEL BEARING
34	070HU247-X	2	HUB & DRUM ASSEMBLY
35	36847	8	STUD-HUB
36	35270	4	NUT-SPINDLE
37	35269	2	LOCK WASHER WHEEL BEARING



# AXLE - REAR DUALY

## AXLE ASSEMBLY BREAKDOWN—REAR DRIVE



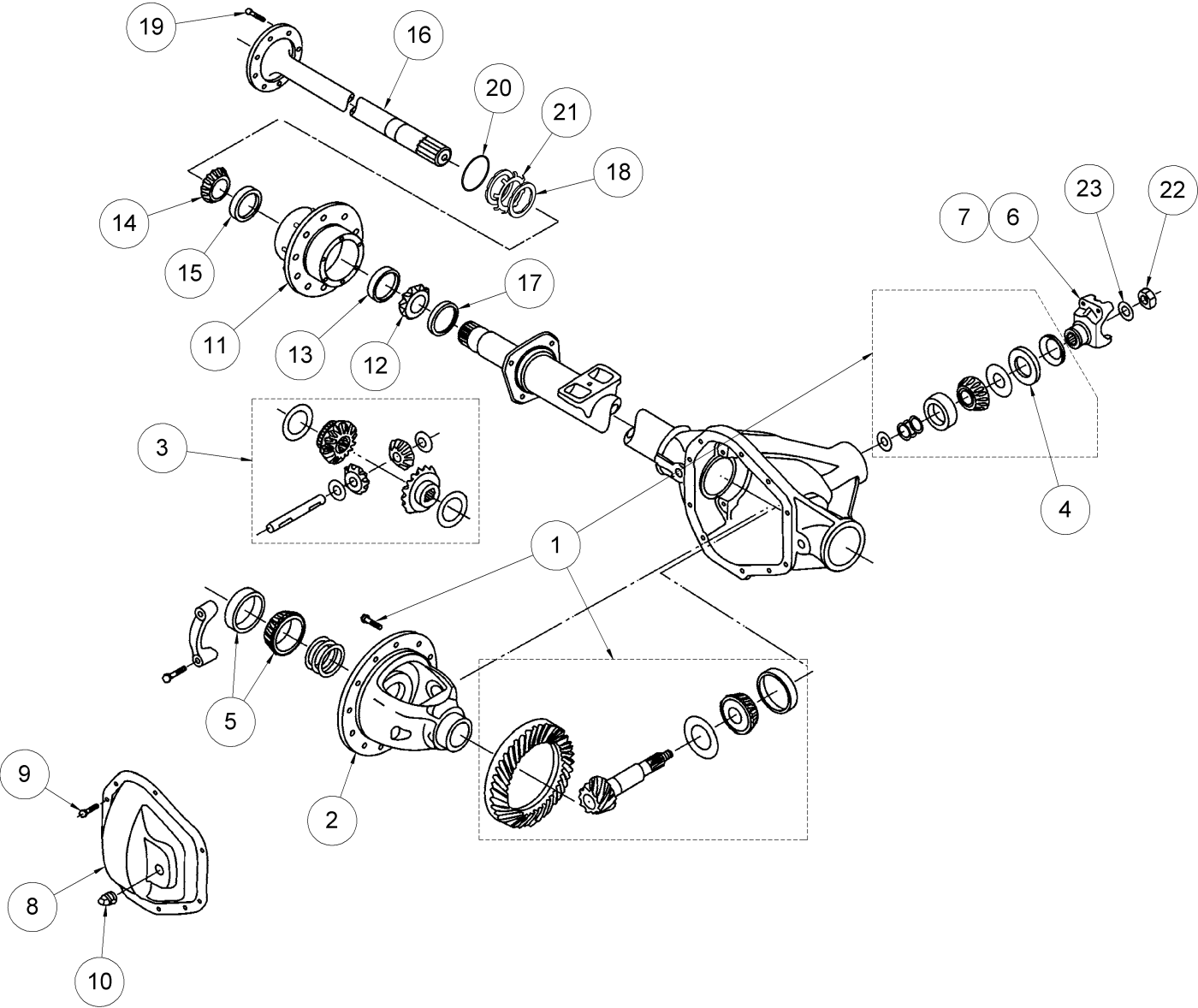


# AXLE - REAR DUALY

## AXLE ASSEMBLY BREAKDOWN – REAR DRIVE CONT

Item	Part Number	Qty	Description
38	070SR124-1	2	SHAFT-AXLE FLANGE LONG
39	31534	16	ADAPTER-STUD
40	36805	24	NUT-LOCK
41	SEE KIT ITEM 58	1	FLANGE HALF - DIFFERENTIAL CASE
42	SEE KIT ITEM 58	1	CAP HALF - DIFFERENTIAL CASE
43	SEE KIT ITEM 58	1	SHAFT - DIFFERENTIAL
44	SEE KIT ITEM 58	1	PINION - DIFFERENTIAL
45	SEE KIT ITEM 57 OR 58	1	GEAR - DIFFERENTIAL
46	SEE KIT ITEM 57 OR 58	1	RING - DIFFERENTIAL GEAR
47	SEE KIT ITEM 57 OR 58	1	PLATE - DIFFERENTIAL
48	SEE KIT ITEM 57 OR 58	1	DISC - DIFFERENTIAL
49	SEE KIT ITEM 57 OR 58	1	DISC
50	SEE KIT ITEM 57 OR 58	1	PLATE
51	30836-1	8	BOLT - DIFFERENTIAL CASE
52	39697	2	AXLE GASKET
53	706999-15X	2	DRIVE GEAR AND ;PINION ASSY INCLUDES ITEMS 2-9, 11-12, 20, 22
54	72165X	2	DRIVE GEAR AND PINION 2,12
55	706625X	2	DIFFERENTIAL CASE (STANDARD) INCLUDES ITEMS 14A, 20-22, 28
56	706602X	2	DIFFERENTIAL INNER PARTS (STANDARD) INCLUDES ITEMS 14A, 22-28
57	706601X	2	DIFFERENTIAL INNER PARTS (LIMITED SLIP) INCLUDES ITEMS 14A, 45-51
58	706354X	2	DIFFERENTIAL DISC AND PLATES (LIMITED SLIP) INCLUDES ITEMS 48-50
59	706604X	2	DIFFERENTIAL ADJUSTING SHIMS INCLUDES ITEMS 14A, 20
60	706603X	2	PINION & BEARING ADJ SHIMS INCLUDES ITEMS 4,6,11,12,14
61	706609X	2	DIFFERENTIAL CASE ASSY (STAND) INCLUDES ITEMS 14,19-28
62	706605X	2	DIFFERENTIAL AND PINION SHIMS INCLUDES ITEMS 4, 6, 11-12, 14A, 20

# AXLE - REAR SINGLE WHEEL



## AXLE - REAR SINGLE WHEEL

Item	Part Number	Qty.	Description
1	706999-15X	1	Pinion and Ring Complete Set
2	TT12-54-002-CA	1	Open Differential
3	TT12-54-003-CA	1	Differential Internals
4	TT12-54-004-CA	1	Pinion Seal
5	TT12-54-005-CA	1	Carrier Bearing (RH and LH bearings included)
6	TT12-54-006-CA	1	Yoke (1350 U-bolt)
7	TT12-54-007-CA	1	1350 U-bolt kit
8	TT12-54-008-CA	1	Cover
9	TT12-54-009-CA	10	Cover Bolts
10	TT12-54-010-CA	1	Cover Plug
11	TT12-54-011-CA	2	Hub
N/S	TT12-54-012-CA	16	Wheel Studs
12	TT12-54-013-CA	2	Inner Wheel Bearing
13	TT12-54-014-CA	2	Inner Wheel Race
14	TT12-54-015-CA	2	Outer Wheel Bearing
15	TT12-54-016-CA	2	Outer Wheel Race
16	TT12-54-017-CA	2	Axle Shaft (RH and LH are identical)
17	TT12-54-018-CA	1	Grease Seal
18	TT12-54-019-CA	4	Spanner Nut Inner and Outer
19	TT12-54-020-CA	24	Axle Shaft Bolts
20	TT12-54-021-CA	2	Axle Shaft O-Ring
21	TT12-54-022-CA	2	Lock Washer
22	30271	1	Pinion Nut
23	30275	1	Pinion Washer
N/S	TT12-54-025-CA	1	Axle Vent Fitting

# AXLES - GENERAL

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## RECOMMENDED TORQUE SPECIFICATIONS DANA 70 AXLE

POSITION	THREAD	WRENCH TORQUE (LBS.-FT)
Drive Pinion Nut	7/8 - 14	240-300
Differential Bearing Cup Cap Screws	1/2 - 13	70-90
Ring Gear Cap Screws	1/2 - 20	100-120
Cover Screws	3/8 - 16	30-40
Differential Case Cap Screws	7/16 - 14	55-75
Brake Retainer Nuts	1/2 - 20	100-110
Axle Shaft Flange Nuts	7/16 - 20	64-70
Upper Kingpin	1 1/8 - 12	500-600
Kingpin Cap Cap Screws	1/2 - 20	70-90
Spindle Mounting Nuts	1/2 - 20	60-80
Tie Rod Stud Nut	5/8 - 18	70 Min (2)
Tie Rod Clamp Nuts	1/2 - 20	35-45
Steering Arm Nuts	1/2 - 20	70-90
Steering Arm Stop Screw & Jam Nut	1/2 - 20	10-20

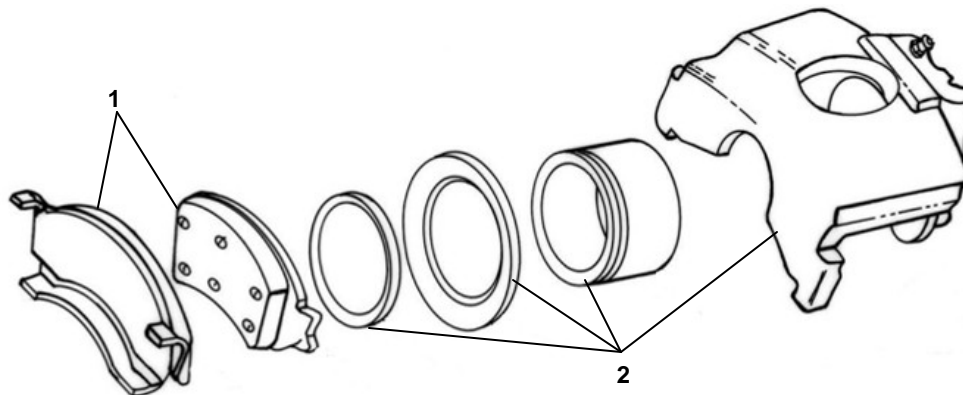
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# BRAKES - FRONT

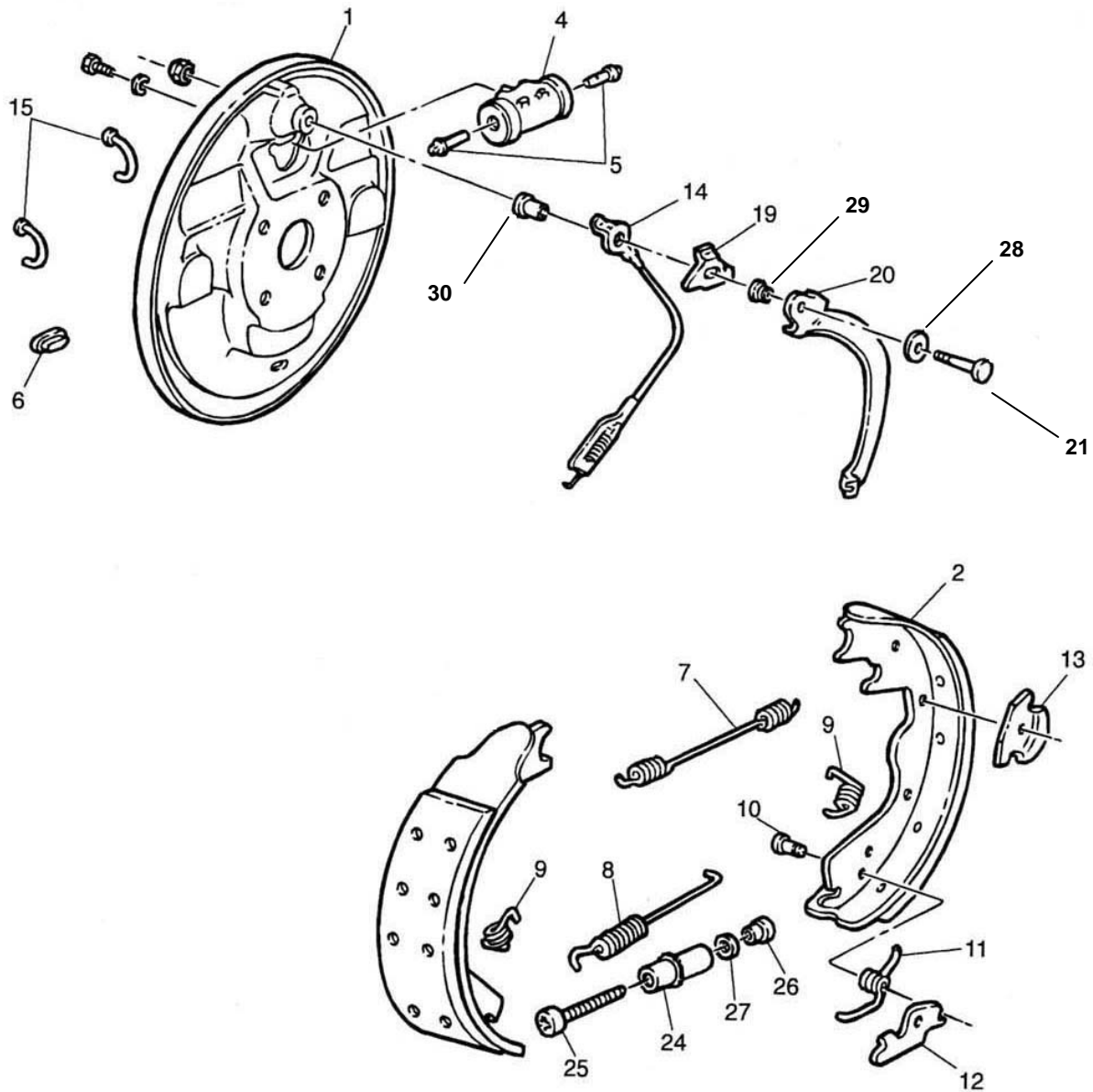
## BRAKE ASSEMBLY—FRONT



Item	Part Number	Qty	Description
1	RMP-149	2	FRONT BRAKE PADS
2	18-4166	1	CALIPER (UNLOADED) RIGHT
2	18-4167	1	CALIPER (UNLOADED) LEFT

# BRAKES - REAR DUALY

## DRUM BRAKE ASSEMBLY—REAR



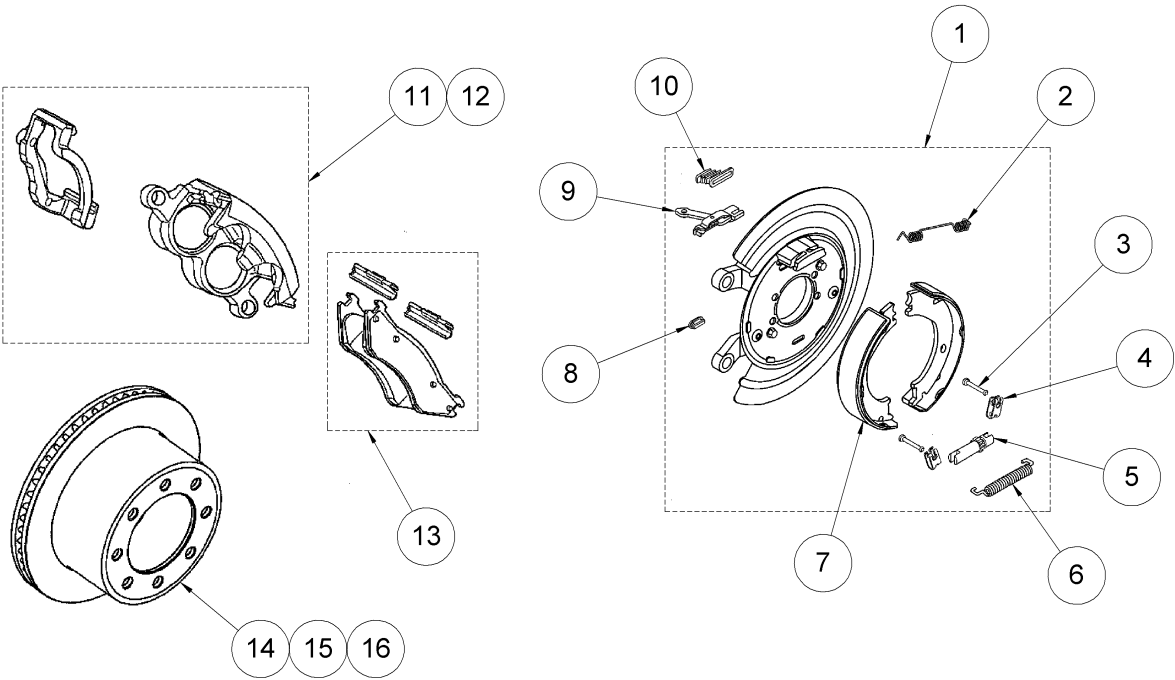
# BRAKES - REAR DUALY

## DRUM BRAKE ASSEMBLY—REAR

Item	Part Number	Qty	Description
	070WD107-1	1	BRAKE ASSEMBLY L/H
	070WD107-2	1	BRAKE ASSEMBLY R/H
1	4313905	1	BACKING PLATE L/H
1	4313904	1	BACKING PLATE R/H
2	RS358R	1 SET	SHOE & LINING SET
4	EW-155068	1	CYLINDER ASSEMBLY L/H
4	EW-155069	1	CYLINDER ASSEMBLY R/H
5	315834	2	WHEEL CYLINDERS CONNECTING LINK
6	*SEE KIT BELOW	1	COVER
7	*SEE KIT BELOW	1	SPRING-UPPER
8	*SEE KIT BELOW	1	SPRING-LOWER
9	*SEE KIT BELOW	2	SPRING-HOLD DOWN
10	*SEE KIT BELOW	1	PIN
11	*SEE KIT BELOW	1	SPRING TENSION
12	*SEE KIT BELOW	1	BRAKE ADJUSTING LINK
13	*SEE KIT BELOW	1	CABLE GUIDE
14	*SEE KIT BELOW	1	CABLE ASSEMBLY
15	*SEE KIT BELOW	2	SPRING-HOLD DOWN
19	4383299	1	PARKING BRAKE CAM L/H
19	4383298	1	PARKING BRAKE CAM R/H
20	4383264	1	PARKING BRAKE LEVER (LEFT)
20	4383265	1	PARKING BRAKE LEVER (RIGHT)
21	4419698	1	BRAKE ANCHOR BOLT
24	*SEE KIT BELOW	1	BRAKE ADJUSTING SOCKET L/H
25	*SEE KIT BELOW	1	BRAKE ADJUSTING SCREW L/H
26	*SEE KIT BELOW	1	BRAKE ADJUSTING SOCKET
27	*SEE KIT BELOW	1	WASHER FLAT
28	3492670	1	WASHER
29	3492656	1	SPRING
30	4383600	1	SPACER
KIT	H2598	LEFT	BRAKE ADJUSTING KIT INCLUDES ITEMS 6,10-14,20,24-27
KIT	H2599	RIGHT	BRAKE ADJUSTING KIT INCLUDES ITEMS 6,10-14,20,24-27
KIT	H7199	LEFT OR RIGHT	BRAKE SPRING KIT INCLUDES ITEMS 7-9 & 15

\*\*KIT PARTS NOT SOLD SEPERATELY

# BRAKES - REAR SINGLE WHEEL



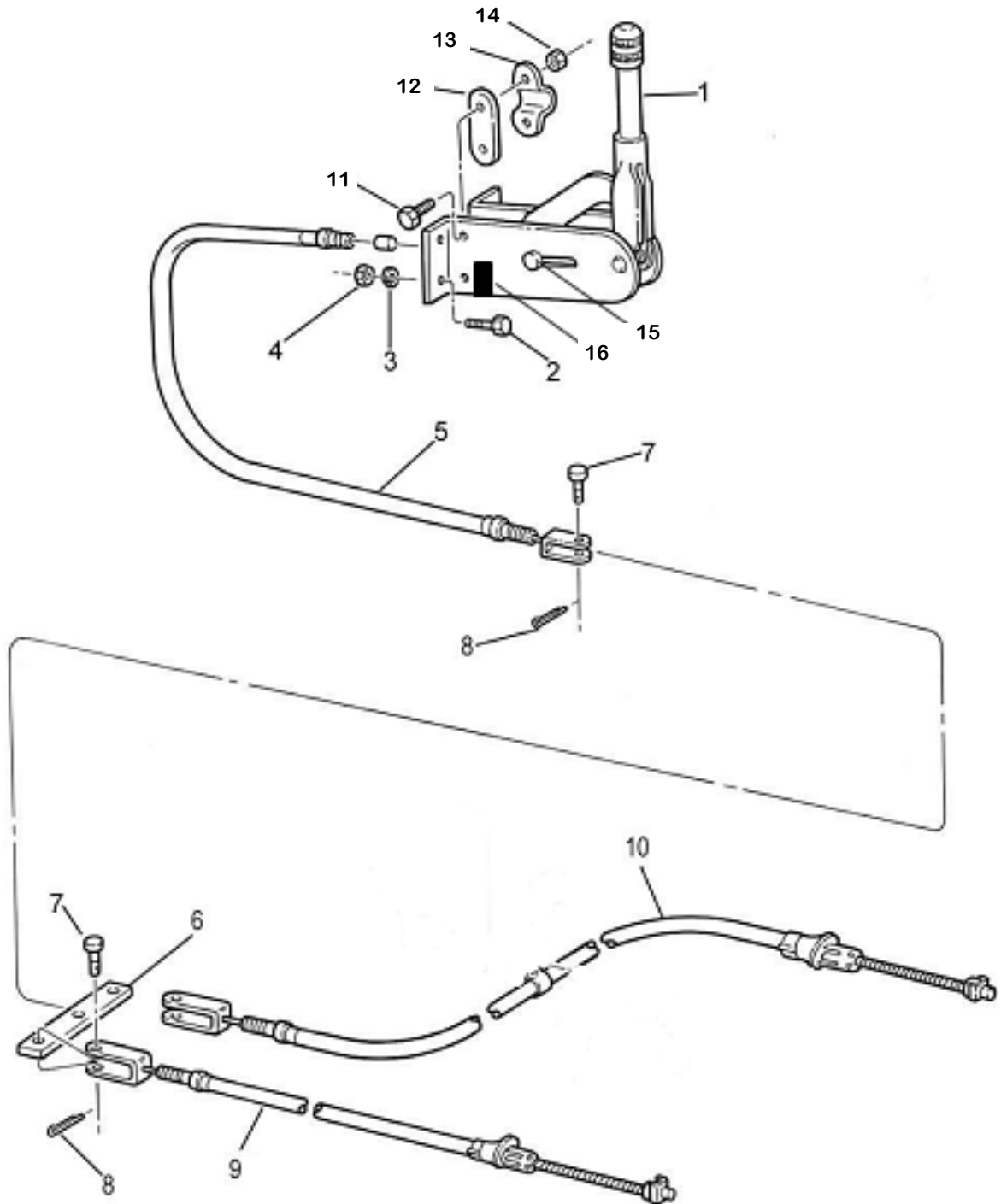


## BRAKES - REAR SINGLE WHEEL

Item	Part Number	Qty.	Description
1	TT12-54-026-CA	2	Parking Brake Assembly
2	TT12-54-027-CA	2	Upper Shoe Return Spring
3	TT12-54-028-CA	2	Brake Shoe Hold-Down Pin (2 pins)
4	TT12-54-029-CA	2	Brake Shoe Hold-Down Clip (2 clips)
5	TT12-54-030-CA	2	Brake Adjuster
6	TT12-54-031-CA	2	Lower Shoe Return Spring
7	TT12-54-032-CA	1	Brake Shoes
8	TT12-54-033-CA	2	Plug
9	TT12-54-034-CA	2	Link and Lever Assembly
10	TT12-54-035-CA	2	Dust Boot
11	TT12-54-036-CA	1	RH Brake Caliper Assembly
12	TT12-54-037-CA	1	LH Brake Caliper Assembly
13	TT12-54-038-CA	1	Brake Pad Set
14	TT12-54-039-CA	2	Rotor
15	TT12-54-040-CA	16	Rotor Bolts
16	TT12-54-041-CA	16	Rotor Washers
N/S	TT12-54-042-CA	8	Parking Brake Assembly Nut
N/S	TT12-54-043-CA	8	Parking Brake Assembly Washer

# BRAKES

## PARKING BRAKE ACTUATOR ASSEMBLY



# BRAKES

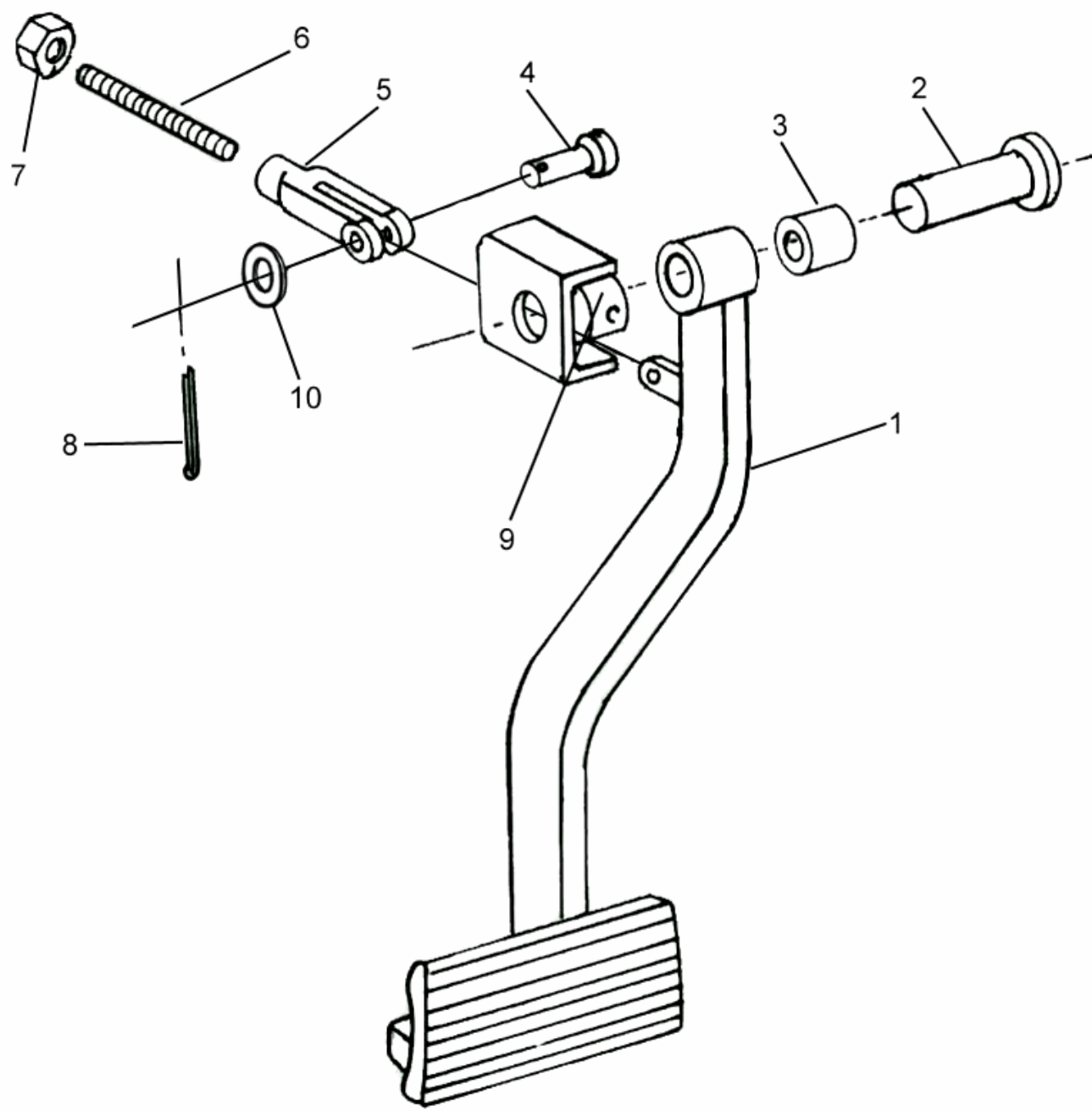
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## PARKING BRAKE ACTUATOR ASSEMBLY

Item	Part Number	Qty	Description
1	A-TT4-00141	1	HAND BRAKE
2	NPN	4	1/4-20 x 1 HCS GR5
3	NPN	4	1/4 FLAT WASHER
4	NPN	4	1/4-20 NUT-LOCK
5	B-TT4-00145	1	CABLE PRIMARY
6	A-TT4-00146	1	BAR EQUALIZER
7	A-TT4-00193	3	CLEVIS PIN
8	NPN	3	COTTER PIN
9 & 10	A-TT4-00150	2	REAR PARKING BRAKE CABLE (DUALY)
9 & 10	TT12-13-002-SA	2	REAR PARKING BRAKE CABLE (SINGLE WHEEL)
11	NPN	1	5/16-18 X 3/4 HCS
12	NPN	1	CABLE CLAMP PLATE
13	NPN	1	CABLE CLAMP HANDLE
14	NPN	2	5/16-18 NUT-LOCK
15	81008429	1	CONTACT PIN
16	82050000	1	PROXIMITY SENSOR
17	82066700	1	MOUNTING SCREW (NOT SHOWN)
18	TT12-13-003-CA	1	SUPPLEMENTAL TENSION SPRING (NOT SHOWN, SINGLE WHEEL ONLY)

# BRAKES

## BRAKE ACTUATOR ASSEMBLY



# BRAKES

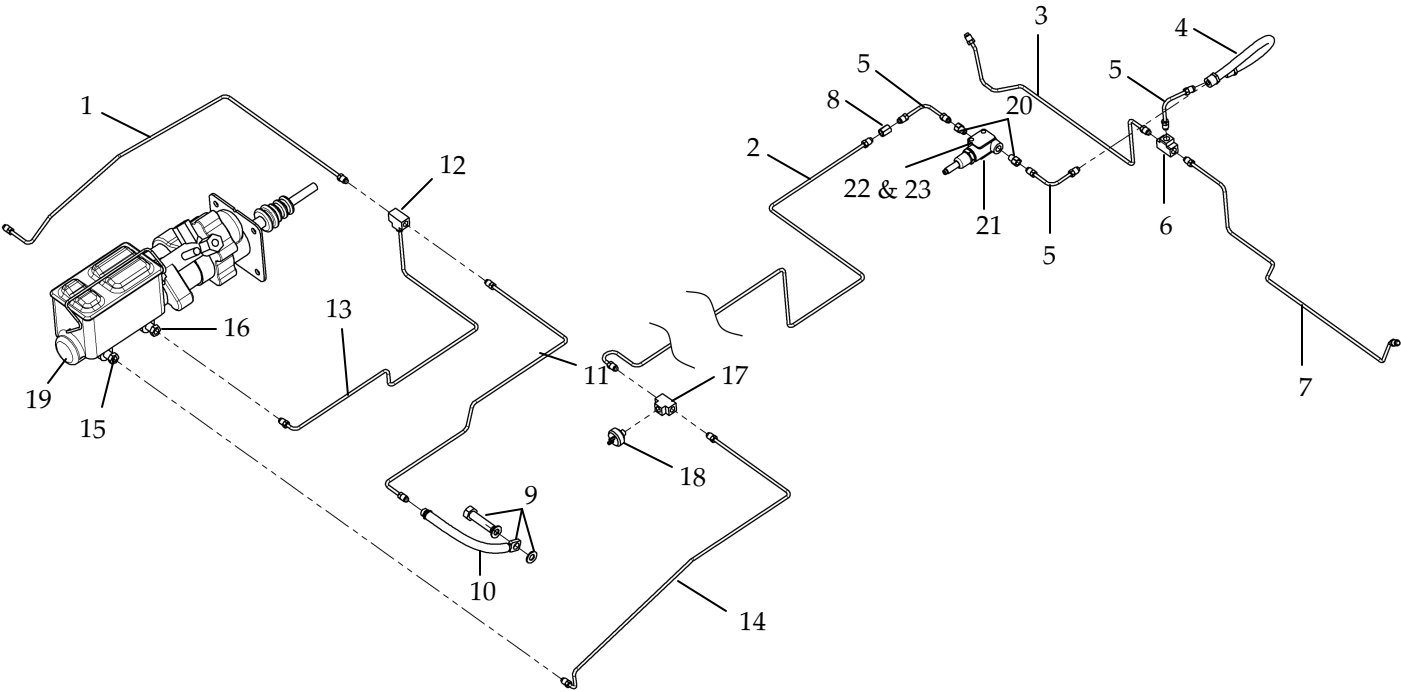
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## BRAKE ACTUATOR ASSEMBLY

Item	Part Number	Qty	Description
1	C-TT4-10181	1	BRAKE PEDAL
2	C-TT4-10182	1	BRAKE PEDAL PIVOT SHAFT
3	C-TT4-10188	1	BEARING
4	A-TT4-00193	1	CLEVIS PIN
5	A-TT4-10192	1	CLEVIS
6	NPN	1	½-20 X 12 ADJUSTING ROD
7	NPN	1	½-20 NUT
8	NPN	1	COTTER PIN
9	A-TT2-0057	2	SHAFT COLLAR
10	NPN	1	CLEVIS PIN WASHER

# BRAKES - DUALLY

## SERVICE BRAKE ASSEMBLY



# BRAKES - DUALY

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## SERVICE BRAKE ASSEMBLY

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	A-TT10-00177	1	BRAKE LINE
2	A-TT10Y-00164	1	BRAKE LINE
3	A-TT10-00169	1	BRAKE LINE
4	A-TT4-00166	1	REAR BRAKE HOSE
5	A-TT4-00167	3	BRAKE LINE
6	A-TT4-00168	1	REAR BRAKE TEE
7	A-TT10-00170	1	BRAKE LINE
8	302X3	1	UNION
9	A-TT4-00178	2	BANJO BOLT
10	A-TT4-00176-2	2	BRAKE LINE HOSE
11	A-TT10-00175	1	BRAKE LINE
12	A-TT4-00174	1	BRAKE LINE TEE
13	A-TT10-00171-1	1	BRAKE LINE
14	A-TT10-00162-1	1	BRAKE LINE
15	A-TT5-00181	1	FITTING
16	A-TT5-00180	1	FITTING
17	A-TT4-00163	1	BRAKE LIGHT SWITCH TEE
18	A-TT4-00173	1	BRAKE LIGHT SWITCH
19	A-TT4-00161-1	1	MASTER CYLINDER
20	48IFHD-3-2	2	ADAPTER
21	A-TU-00173P	1	PROPORTIONING VALVE
22	NPN	2	1/4-20 X 1.5 GR5 BOLT
23	NPN	2	1/4-20 LOCK NUT





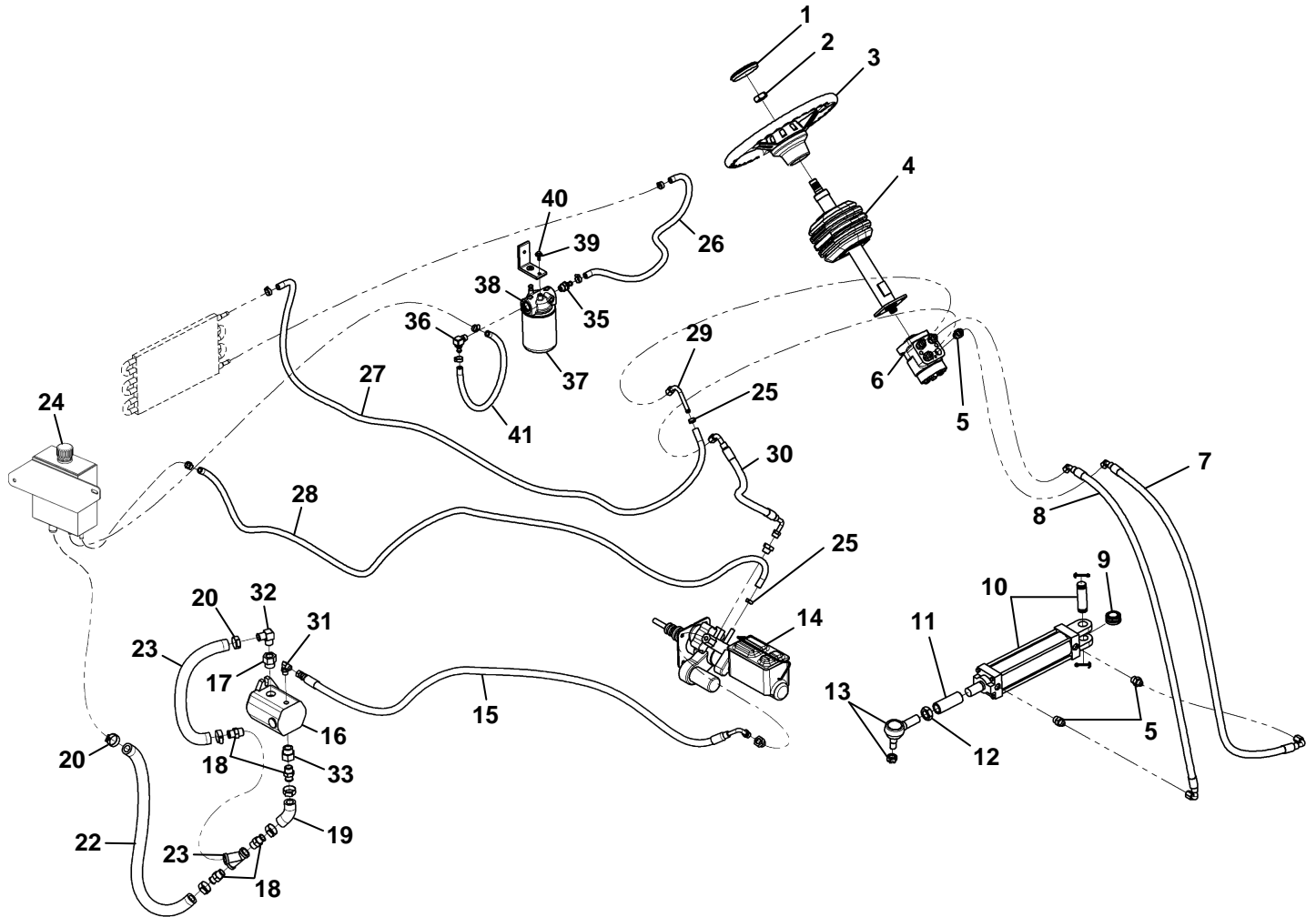
# BRAKES - SINGLE REAR WHEEL

## SERVICE BRAKE ASSEMBLY

Item	Part Number	Qty.	Description
1	A-TT10-00177	1	BRAKE LINE
2	A-TT10Y-00164	1	BRAKE LINE
3	A-TT10-00169	1	BRAKE LINE
4	A-TT4-00166	1	REAR BRAKE HOSE
5	A-TT4-00167	1	BRAKE LINE
6	A-TT4-00168	1	REAR BRAKE TEE
7	A-TT10-00170	1	BRAKE LINE
8	TT12-13-001-SA	1	REAR BRAKE LINE BRACKET
9	A-TT4-00178	4	BANJO BOLT (TWO FRONT AND TWO REAR)
10	A-TT4-00176-2	2	BRAKE LINE HOSE
11	A-TT10-00175	1	BRAKE LINE
12	A-TT4-00174	1	BRAKE LINE TEE
13	A-TT10-00171-1	1	BRAKE LINE
14	A-TT10-00162-1	1	BRAKE LINE
15	A-TT5-00181	1	FITTING
16	A-TT5-00180	1	FITTING
17	A-TT4-00163	1	BRAKE LIGHT SWITCH TEE
18	A-TT4-00173	1	BRAKE LIGHT SWITCH
19	A-TT4-00161-1	1	MASTER CYLINDER
N/S	A-TT4-00176-1	2	REAR CALIPER HOSE

# HYDRAULIC SYSTEM

## HYDRAULIC STEERING SYSTEM WITH PRINCE PUMP



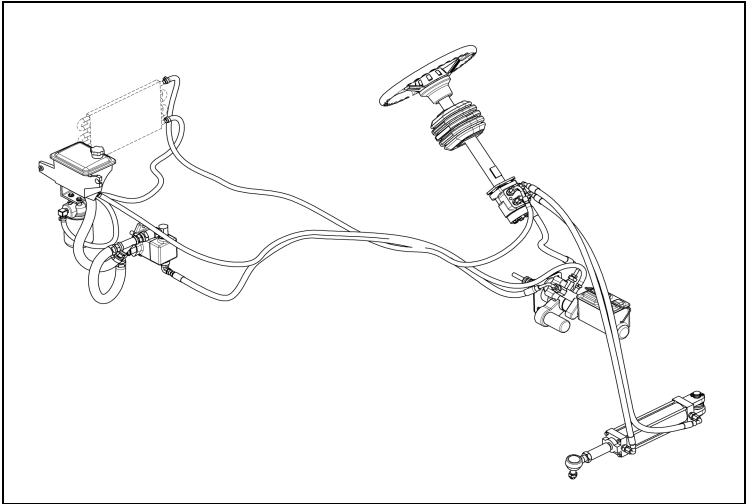
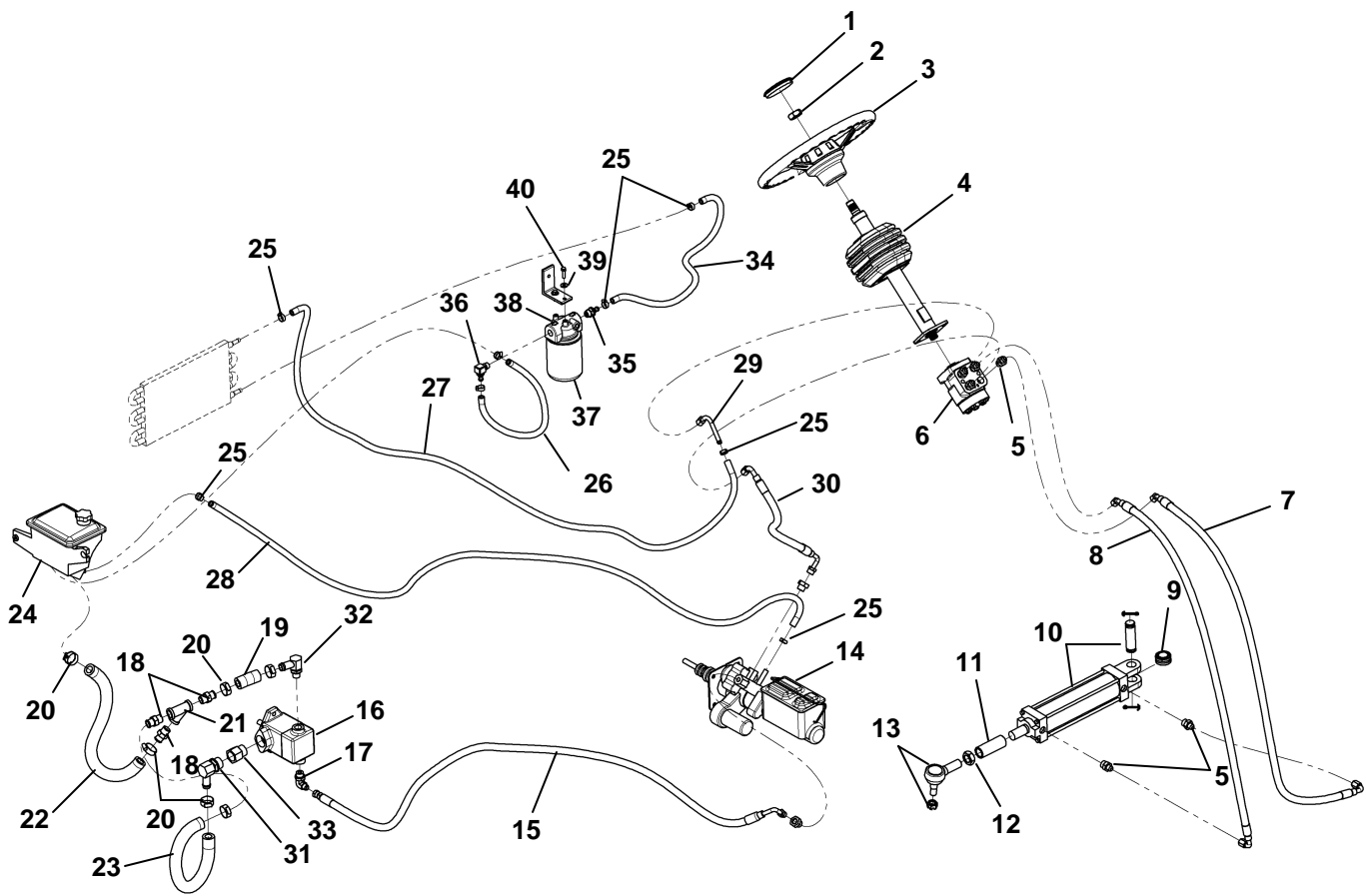
# HYDRAULIC SYSTEM

## HYDRAULIC STEERING SYSTEM WITH PRINCE PUMP

Item	Part Number	Qty	Description
1	A-TT10-00811	1	HORN BUTTON
2	A-TT4-00813	1	WHEEL NUT
3	A-TT10-00809	1	STEERING WHEEL
4	A-TT10-00807-1	1	TILT STEERING COLUMN
5	C5315X6X8	6	1/2M-1/2M ADAPTER FITTING
6	A-TU-00801	1	CHAR LYNN PUMP
7	A-TT10-00829	1	HYDRAULIC STEERING LINE 46"
8	A-TT10-00822	1	HYDRAULIC STEERING LINE 43"
9	A-TT10-00826	1	BEARING
10	A-TT10-00803-1-MACH	1	HYDRAULIC STEERING CYLINDER
11	A-TT10-00817	1	DRAG LINK
12	A-TT4-00406	2	JAM NUT
13	A-TT10-00407	1	TIE ROD END
14	A-TT4-00161-1	1	MASTER CYLINDER
15	06UB67-56-06U606	1	HYDRAULIC HOSE PUMP TO MAST CYL
16	SP20PB11L145H9L	1	PRINCE PUMP
17	C3269X12X8	1	FEMALE PIPE ADAPTER
18	A-TT4-00606-1A	3	Y FITTING MALE COUPLING
19	H03912	1	3/4 X 3 INCH SUCTION HOSE
20	NPN	6	#12 HOSE CLAMP
21	A-TT4-00606-1	1	Y FITTING BLACK IRON
22	H03912	1	3/4 X 21 INCH SUCTION HOSE
23	H03912	1	3/4 X 19 INCH SUCTION HOSE
24	TT00-09-002-AA	1	RESERVOIR POWER STEERING FLUID
25	NPN	8	#4 HOSE CLAMP
26	H10106	1	3/8 X 35 INCH HYD HOSE PSI 350
27	H10106	1	3/8 X 101 INCH HYD HOSE PSI 350
28	H10106	1	3/8 X 98 INCH HYD HOSE PSI 350
29	A-TT10-0001	1	90 DEG FITTING 3/8 INCH ELBOW
30	06U666-22-06UB66	1	HYDRAULIC HOSE
31	C5515X6	1	FITTING, ELBOW 3/8 X 3/8
32	269HB-12-8	1	ELBOW 3/4 X 1/2
33	05TB-12-12	1	3/4 M SAE 3/4 SUCTION BARB FITTING
35	4312-06-08	1	STRAIGHT BARB 1/2"-HYD FILTER
36	4390-06-08	1	90 DEGREE BARB 1/2"-HYD FILTER
37	SF-6520	1	FILTER ELEMENT-POWER STEERING
38	SAF-05-25-0	1	FILTER HEAD-POWER STEERING
39	NPN	1	LOCK WASHER, 1/4
40	NPN	1	HCS, 1/4-20 UNC X .75
41	H10106	1	3/8 X 24 INCH HYD HOSE PSI 350

# HYDRAULIC SYSTEM

## HYDRAULIC STEERING SYSTEM WITH METARIS PUMP



Item	Part Number	Qty	Description
1	A-TT10-00811	1	HORN BUTTON
2	A-TT4-00813	1	WHEEL NUT

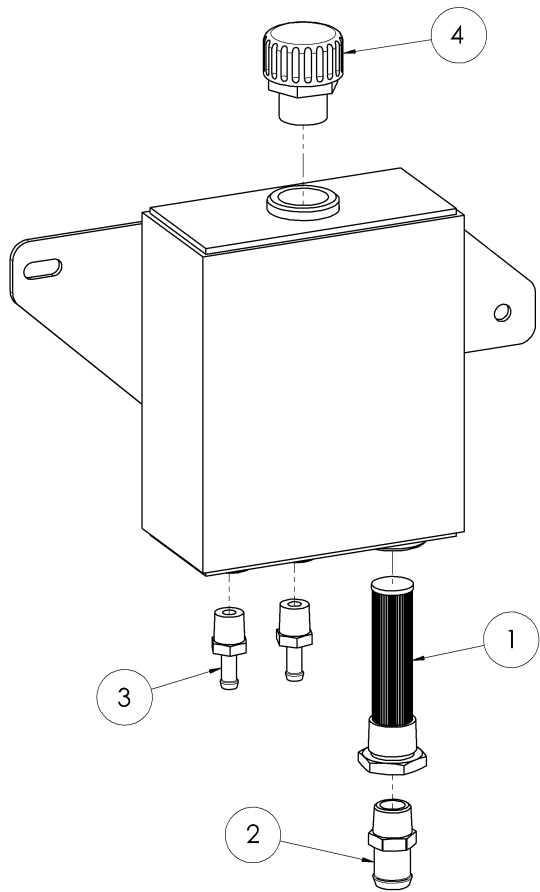
# HYDRAULIC SYSTEM

## HYDRAULIC STEERING SYSTEM WITH MATERIS PUMP

Item	Part Number	Qty	Description
3	A-TT10-00809	1	STEERING WHEEL
4	A-TT10-00807-1	1	TILT STEERING COLUMN
5	C5315X6X8	6	1/2M-1/2M ADAPTER FITTING
6	A-TU-00801	1	CHAR LYNN PUMP
7	A-TT10-00829	1	HYDRAULIC STEERING LINE 46"
8	A-TT10-00822	1	HYDRAULIC STEERING LINE 43"
9	A-TT10-00826	1	BEARING
10	A-TT10-00803-1-MACH	1	HYDRAULIC STEERING CYLINDER
11	A-TT10-00817	1	DRAG LINK
12	A-TT4-00406	2	JAM NUT
13	A-TT10-00407	1	TIE ROD END
14	A-TT4-00161-1	1	MASTER CYLINDER
15	06UB67-56-06U606	1	HYDRAULIC HOSE PUMP TO MAST CYL
16	V10F1T3T11C3F20L	1	METARIS PUMP
17	C5515X6X8	1	1/4 M SAE M JIC 37 FITTING
18	A-TT4-00606-1A	3	Y FITTING MALE COUPLING
19	H03912	1	3/4 X 3 INCH SUCTION HOSE
20	NPN	6	#12 HOSE CLAMP
21	A-TT4-00606-1	1	Y FITTING BLACK IRON
22	H03912	1	3/4 X 23 INCH SUCTION HOSE
23	H03912	1	3/4 X 22 INCH SUCTION HOSE
24	TT00-09-002-AA	1	RESERVOIR POWER STEERING FLUID
25	NPN	8	#4 HOSE CLAMP
26	H10106	1	3/8 X 24 INCH HYD HOSE PSI 350
27	H10106	1	3/8 X 101 INCH HYD HOSE PSI 350
28	H10106	1	3/8 X 98 INCH HYD HOSE PSI 350
29	A-TT10-0001	1	90 DEG FITTING 3/8 INCH ELBOW
30	06U666-22-06UB66	1	HYDRAULIC HOSE
31	25TB-12-12	1	3/4 M SAE 3/4 SUCTION BARB 90 DEG
32	4601-12-08	1	1/2 M SAE 3/4 SUCTION BARB 90 DEG
33	7033X14X12	1	7/8 SAE 3/4 SAE FITTING
34	H10106	1	3/8 X 36 INCH HYD HOSE PSI 350
35	4312-06-08	1	STRAIGHT BARB 1/2"
36	4390-06-08	1	90 DEG BARB 1/2"
37	SF-6520	1	FILTER ELEMENT
38	SAF-05-25-0	1	FILTER HEAD
39	NPN	1	1/4 LOCK WASHER
40	NPN	1	1/4-20 X 3/4 BOLT

# HYDRAULIC SYSTEM

## HYDRAULIC TANK SUBASSEMBLY (STYLE A - SUPERSEDED)

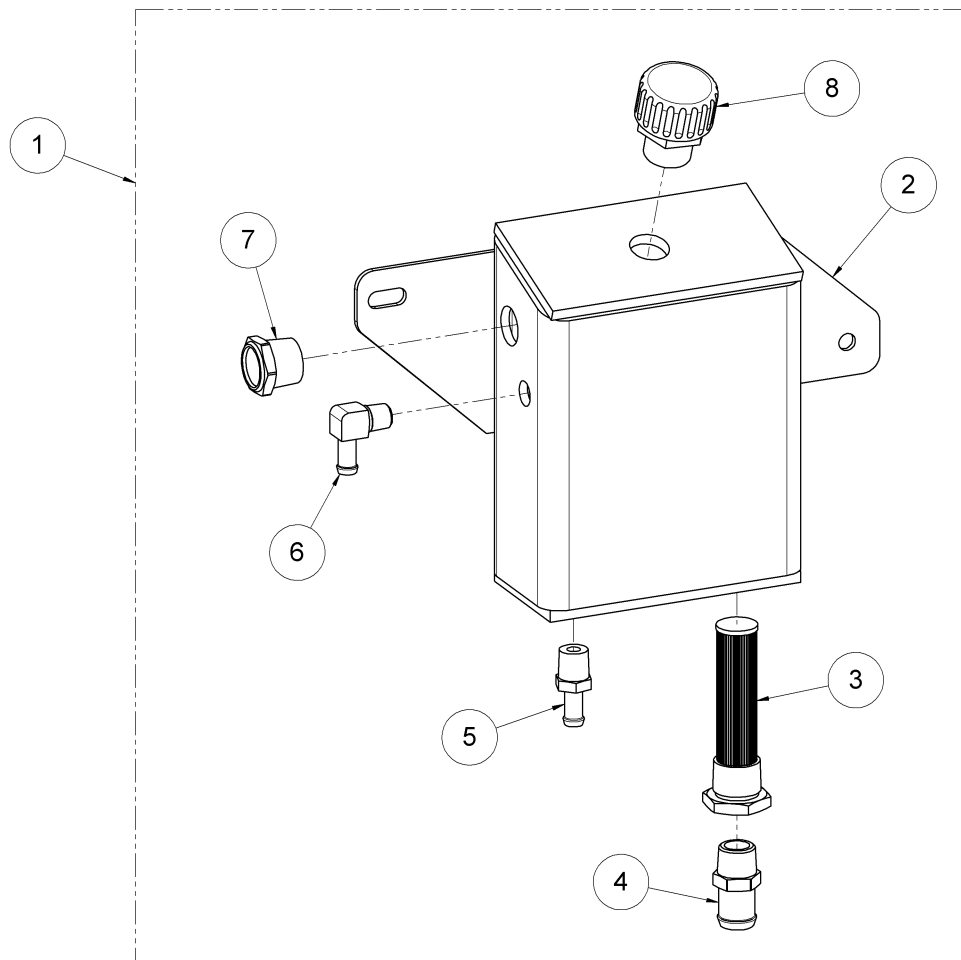


Item	Part Number	Qty	Description
1	TT00-09-003-CA	1	SUCTION STRAINER
2	A-TT4-00606-1A	1	HOSE BARB, 3/4 BARB X 1/2 NPT, BRASS
3	05706B-106	1	HOSE BARB, 3/8 BARB X 3/8 NPT, BRASS
4	A-ES12-0550	1	HYDRAULIC BREATHER CAP

\*See Steering Fluid and Fill Procedure (Maintenance Section).

# HYDRAULIC ASSIST

## HYDRAULIC ASSIST SYSTEM SCHEMATIC (STYLE B)



Item	Part Number	Qty	Description
1	TT00-09-002-AA	1	TT POWER STEERING TANK SUBASSEMBLY (INCLUDES ITEMS 2-8)
2	TT00-09-001-SAC	1	POWER STEERING RESERVOIR
3	TT00-09-003-CA	1	TT SUCTION STRAINER
4	A-TT4-00606-1A	1	HOSE BARB, 3/4 BARB X 1/2 NPT, BRASS
5	05706B-106	1	HOSE BARB, 3/8 BARB X 3/8 NPT, BRASS
6	05706B-C04	1	ELBOW, HOSE BARB, 3/8 BARB X 3/8 NPT, BRASS
7	NVSP-09-015-CA	1	SIGHT GAGE, 1/2 NPT
8	TT00-09-004-CA	1	HYDRAULIC BREATHER CAP, 1/2 NPT

\*See Steering Fluid and Fill Procedure (Maintenance Section).

# HYDRAULIC SYSTEM

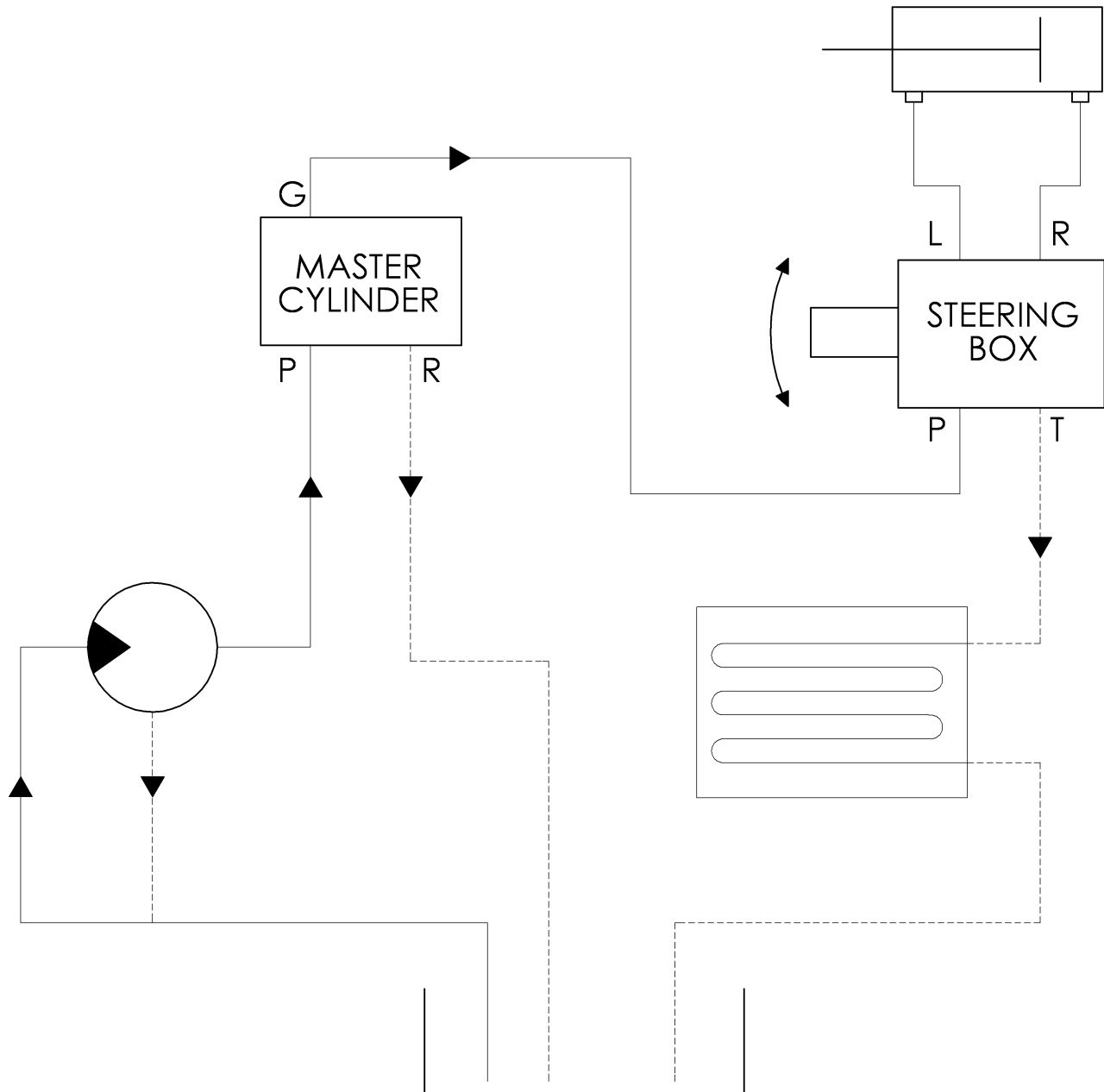
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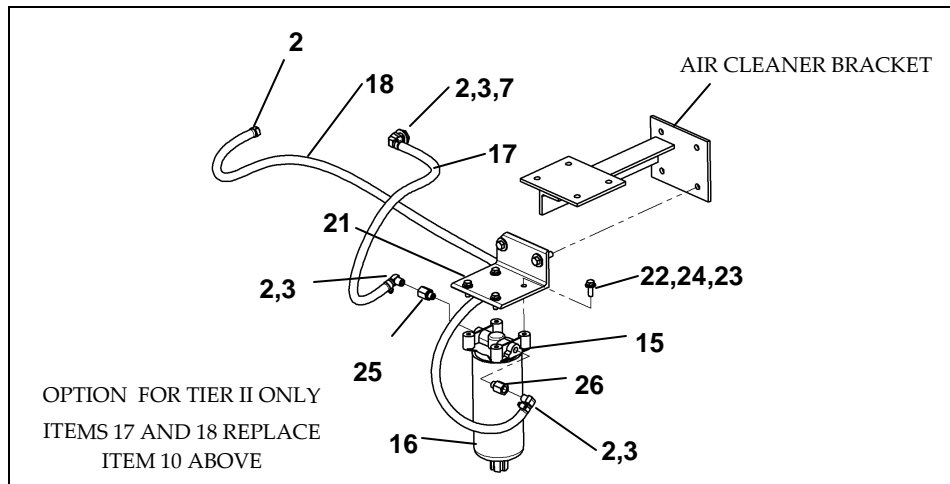
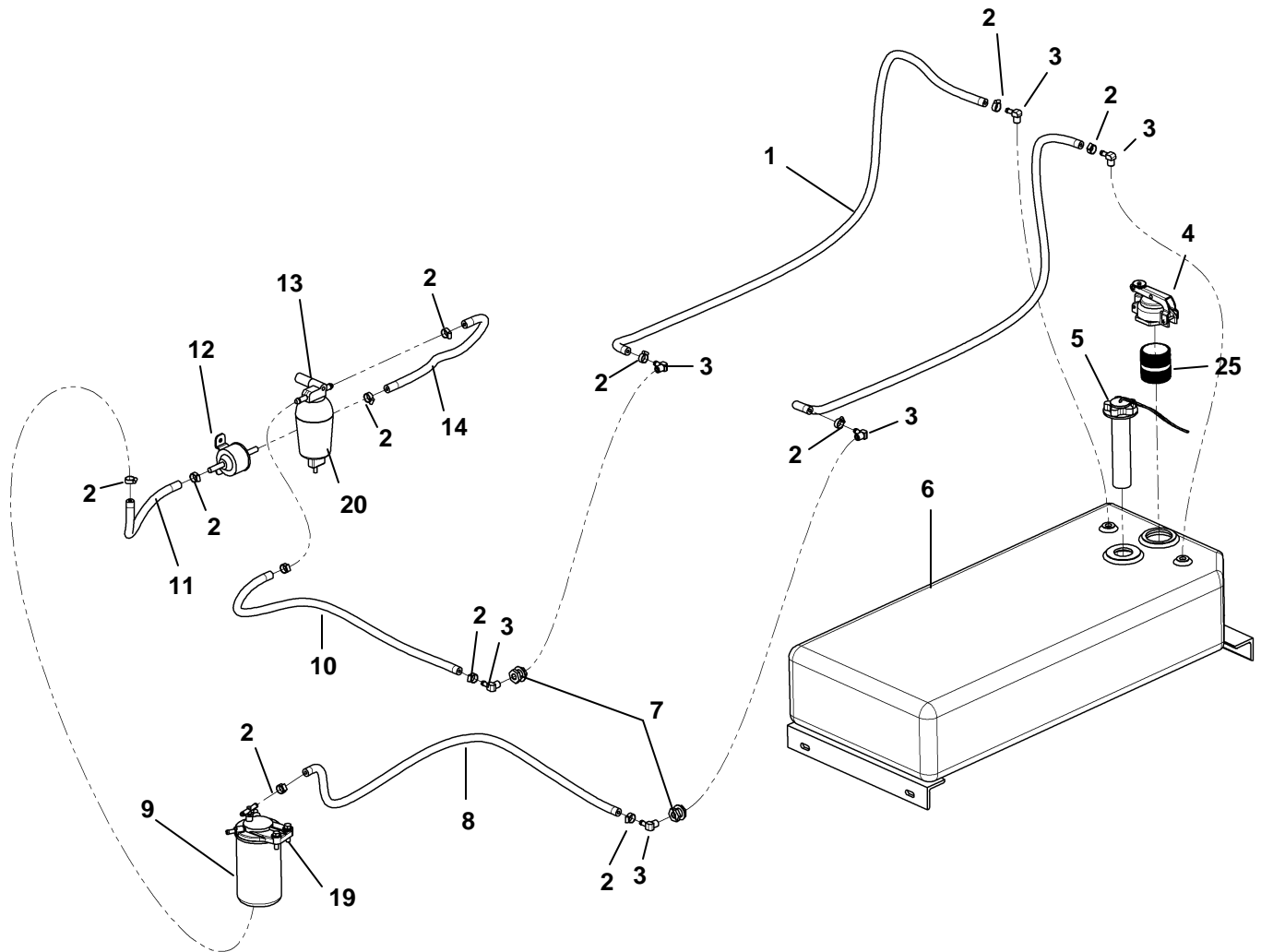
# HYDRAULIC ASSIST

HYDRAULIC ASSIST SYSTEM SCHEMATIC



# FUEL SYSTEM

## FUEL SYSTEM YANMAR TIER II & TIER III



# FUEL SYSTEM

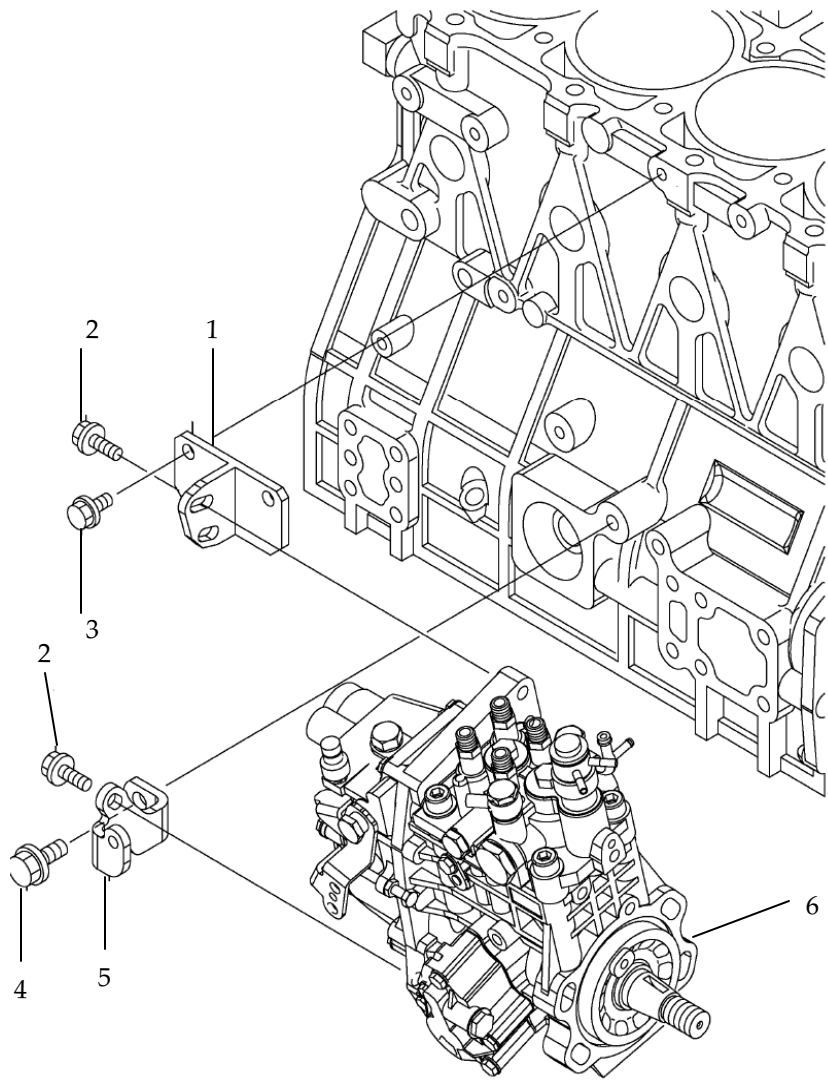
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## FUEL SYSTEM YANMAR TIER II & TIER III

Item	Part Number	Qty	Description
1	H05705	2	FUEL HOSE 60 INCH SAE30R7 50 PSI WK PR
2	NPN	12	#4 HOSE CLAMP
3	05705B-C04	6	90 DEGREE ELBOW FITTING
4	A-TT4-00271-1	1	FUEL CAP
5	A-TT10-00276	1	FUEL SENDING UNIT
6	A-TT10-00273	1	FUEL TANK
7	A-TT4-00280	2	BULK HEAD FITTING
8	H05705	1	FUEL HOSE 32 INCH SAE30R7 50 PSI WK PR
9	123907-55801	1	FUEL FILTER ELEMENT
10	H05705	1	FUEL HOSE 45 INCH SAE30R7 50 PSI WK PR
11	H05705	1	FUEL HOSE 15 INCH SAE30R7 50 PSI WK PR
12	119225-52102	1	FUEL FEED PUMP
13	129242-55700	1	FUEL WATER SEPARATOR COMPLETE
14	H05705	1	FUEL HOSE 20 INCH SAE30R7 50 PSI WK PR
15	AE-OPT-0091	1	LUBRICITY FILTER ASSY COMP (OPTION-INCLUDES ITEMS 16,25)
16	FS20000	1	LUBRICITY FILTER ELEMENT
17	H05705	1	5/16 HOSE SAE30R7 WKPK 28" (OPTION)
18	H05705	1	5/16 HOSE SAE30R7 WKPK 60" (OPTION)
19	129004-55612	1	FUEL FILTER HEAD
20	129422-55730	1	FUEL WATER SEPERATOR ELEMENT
21	AE-OPT-0091-A TT12	1	BRACKET, LUBRICITY FILTER
22	NPN	4	8-1.25 X 30 BOLT
23	NPN	4	5/16 FLAT WASHER
24	NPN	4	8MM SPLIT LOCK WASHER
25	NPN	1	2" CLOSE NIPPLE
26	222P-4-M112	2	BRASS FITTING, 1/4" NPT X M12X1.5

# FUEL SYSTEM

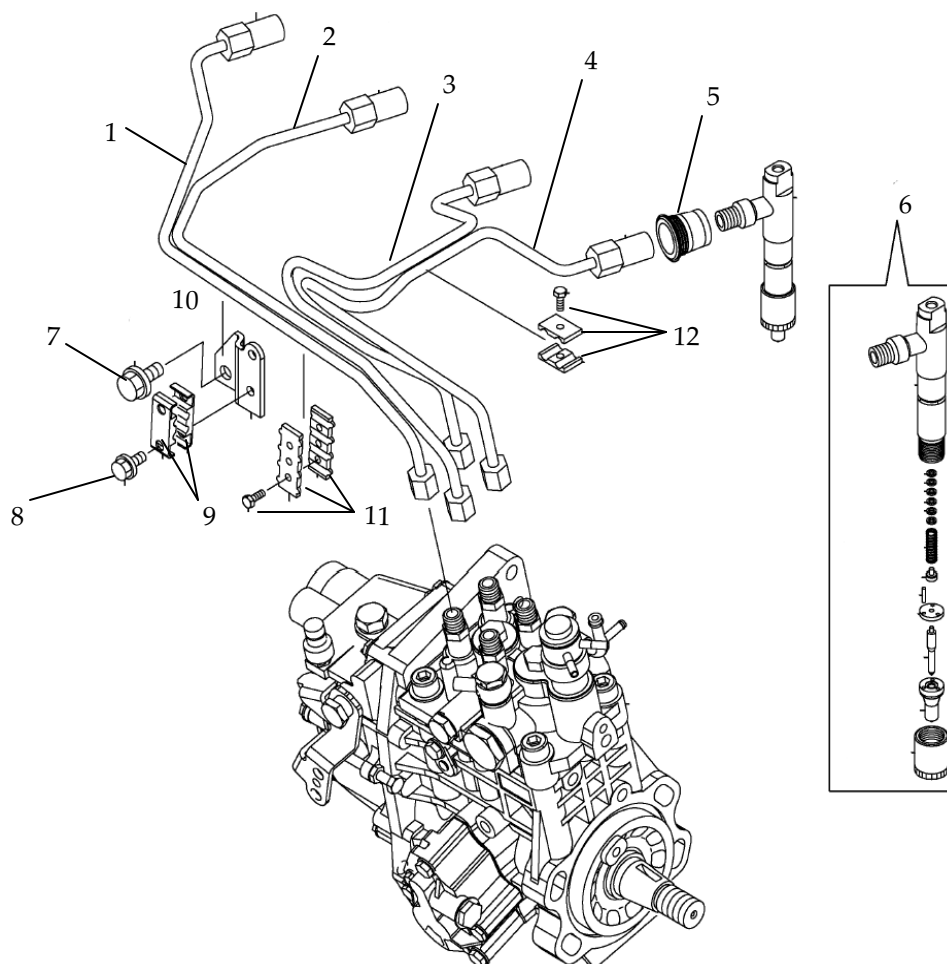
## FUEL INJECTION PUMP – YANMAR TIER II DIESEL



Item	Part Number	Qty	Description
1	129907-01950	1	MOUNTING BRACKET
2	26106-080222	3	BOLT, M8 X 22 PLATED
3	26106-080162	2	BOLT, M8 X 16 PLATED
4	26106-100202	1	BOLT, M10 X 20 PLATED
5	129907-01960	1	MOUNTING BRACKET
6	729908-51310	1	FUEL INJECTION PUMP

# FUEL SYSTEM

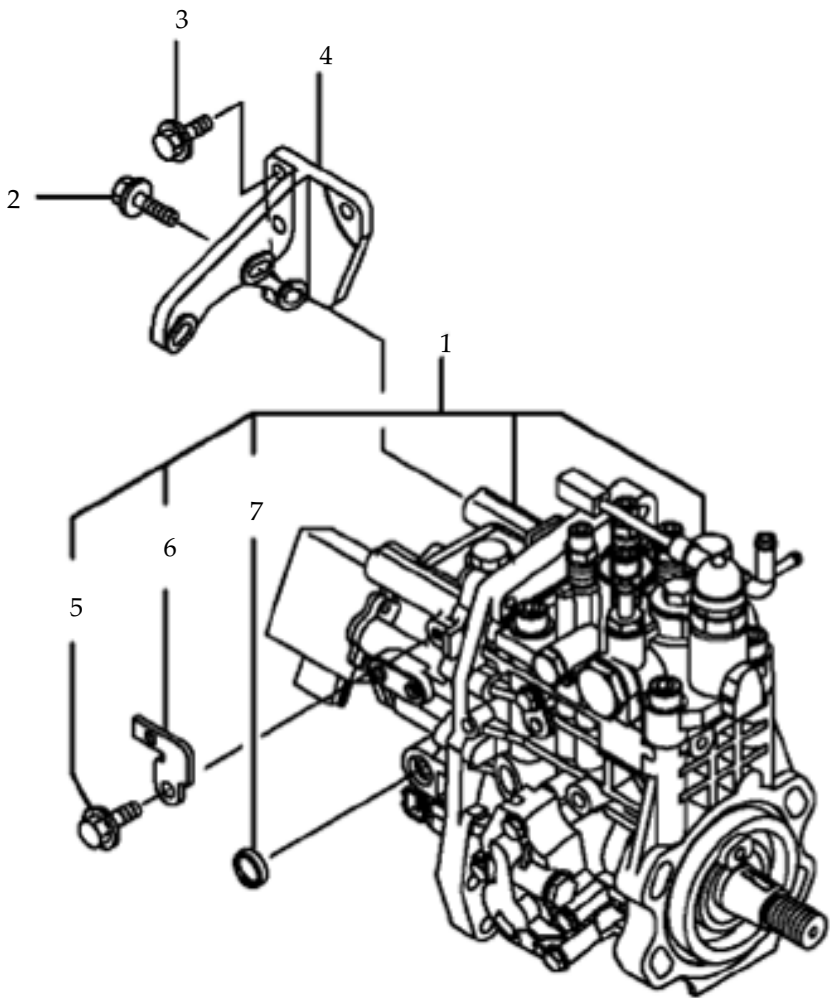
## FUEL INJECTION LINES AND NOZZLE – YANMAR TIER II DIESEL



Item	Part Number	Qty	Description
1	129908-59810	1	PIPE ASSEMBLY FUEL INJECTION
2	129908-59820	1	PIPE ASSEMBLY FUEL INJECTION
3	122908-59830	1	PIPE ASSEMBLY FUEL INJECTION
4	129908-59840	1	PIPE ASSEMBLY FUEL INJECTION
5	123907-11601	4	PIPE SEAL
6	729908-53100	4	FUEL INJECTOR
7	26106-080182	1	BOLT, M8 X 18 PLATED
8	26106-060162	1	BOLT, M6 X 16 PLATED
9	122780-59100	2	RETAINER
10	129907-59710	1	BRACKET
11	129550-59120	1	RETAINER
12	119305-59120	1	RETAINER

# FUEL SYSTEM

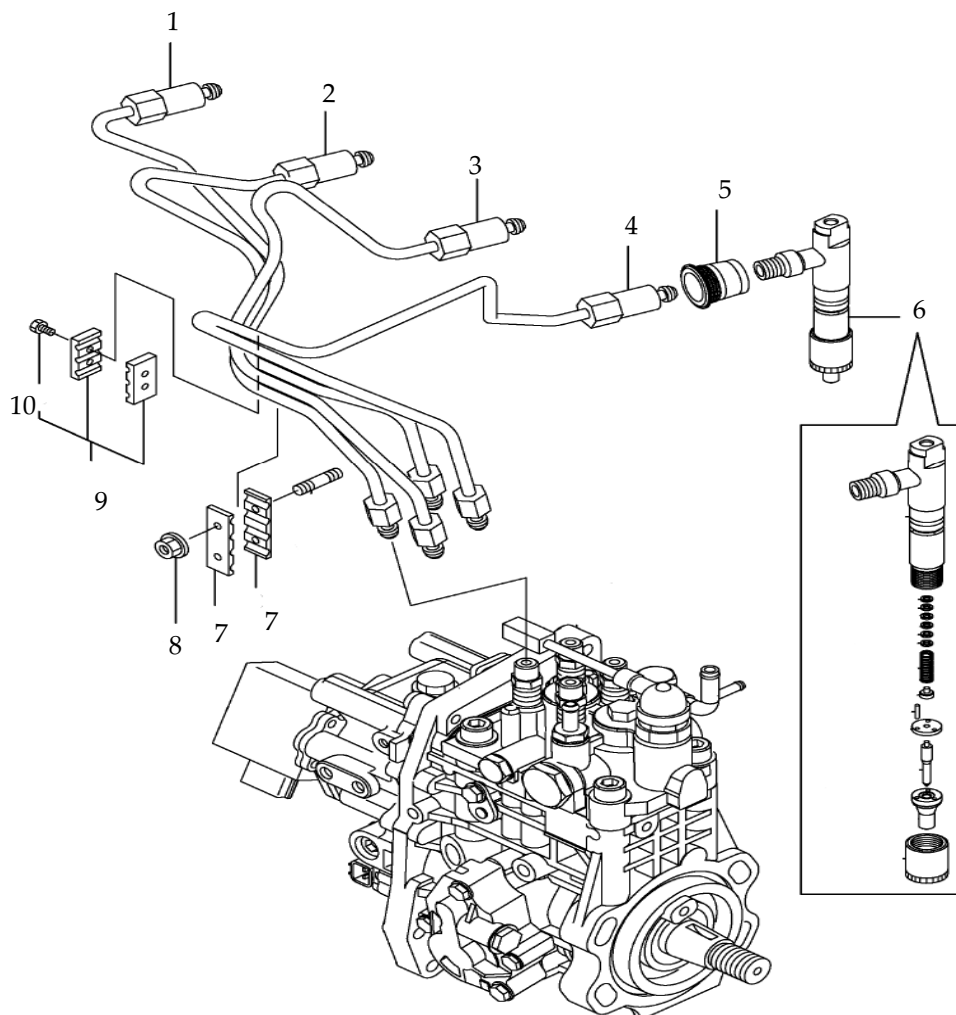
## FUEL INJECTION PUMP – YANMAR TIER III DIESEL



Item	Part Number	Qty	Description
1	729928-51300	1	FUEL INJECTION PUMP
2	26106-080302	3	BOLT, M8 X 30 PLATED
3	26106-080202	3	BOLT, M8 X 20 PLATED
4	129927-51250	1	RETAINER
5	26106-060122	1	BOLT, M6 X 12 PLATED
6	129927-51670	1	BRACKET
7	27241-160000	1	PLUG 16

# FUEL SYSTEM

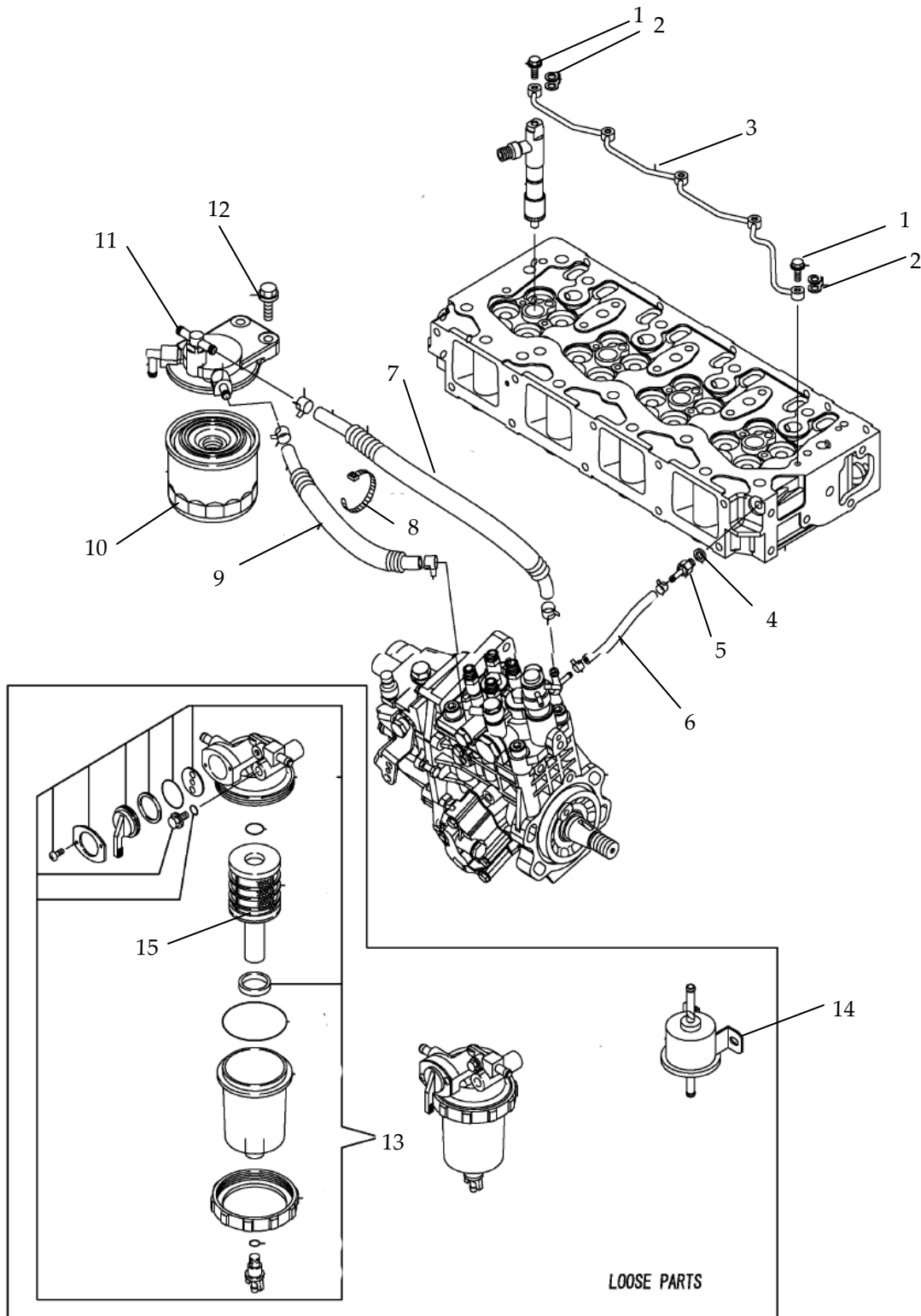
## FUEL INJECTION LINES AND NOZZLE – YANMAR TIER III DIESEL



Item	Part Number	Qty	Description
1	129927-59810	1	PIPE ASSEMBLY FUEL INJECTION
2	129927-59820	1	PIPE ASSEMBLY FUEL INJECTION
3	122927-59830	1	PIPE ASSEMBLY FUEL INJECTION
4	129927-59840	1	PIPE ASSEMBLY FUEL INJECTION
5	123907-11601	4	PIPE SEAL
6	729927-53100	4	FUEL INJECTOR
7	123472-59120	2	BRACKET
8	26366-060002	2	NUT M6
9	129150-59120	1	RETAINER
10	129150-59131	2	BOLT, M4 X 14 HEX SCKT

# FUEL SYSTEM

## ENGINE FUEL LINE — YANMAR TIER II





# FUEL SYSTEM

## ENGINE FUEL LINE—YANMAR TIER II

Item	Part Number	Qty	Description
1	123907-59540	5	JOINT BOLT, M6
2	123907-59550	5	PACKING, FUEL RETURN
3	129907-59140	1	PIPE ASSEMBLY F.O. RETURN
4	22190-080002	1	SEAL WASHER
5	123907-59560	1	HOSE JOINT
6	129486-59551	1	PIPE ASSY FUEL RETURN WITH CLAMPS
7	129457-59010	1	PIPE ASSY FUEL WITH CLAMPS
8	121750-59890	1	CLAMP #40
9	129981-59010	1	PIPE ASSY FUEL WITH CLAMPS
10	123907-55800	1	FUEL FILTER ELEMENT
11	129004-55610	1	BRACKET FUEL FILTER
12	26106-080302	2	BOLT, M8 X 30 PLATED
13	119802-55700	1	FUEL WATER SEPERATOR COMPLETE ASSY
14	119225-52102	1	PUMP ASSEMBLY, FUEL FEED
15	119802-55710	1	FUEL WATER SEPERATOR ELEMENT

Note: The fuel system needs to be primed under certain conditions.

\*Before starting the engine for the first time

\*After running out of fuel and fuel has been added to the fuel tank

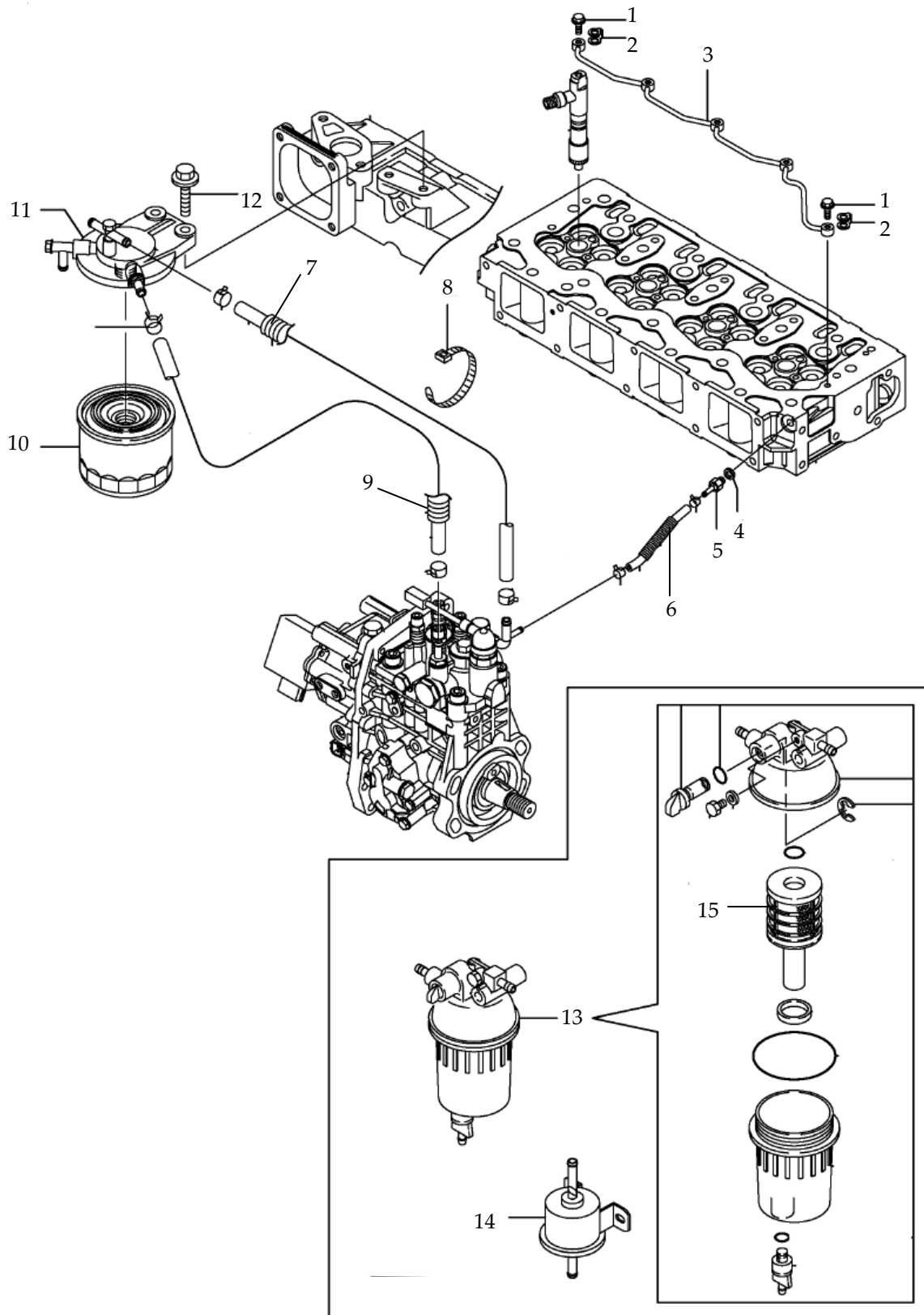
\*After fuel system maintenance such as changing the fuel filter and draining the fuel/water separator, or replacing a fuel system component

To prime the fuel system:

1. Turn the key to the ON position for 10 to 15 seconds. This will allow the electric fuel pump to prime the fuel system.
2. NEVER use the starter motor to crank the engine in order to prime the fuel system. This may cause the starter motor to overheat and damage the coils, pinion and / or ring gear.

# FUEL SYSTEM

## ENGINE FUEL LINE – YANMAR TIER III DIESEL



# FUEL SYSTEM

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## ENGINE FUEL LINE—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	123907-59540	5	JOINT BOLT, M6
2	123907-59550	5	PACKING, FUEL RETURN
3	129907-59140	1	PIPE ASSEMBLY F.O. RETURN
4	22190-080002	1	SEAL WASHER
5	123907-59560	1	HOSE JOINT
6	129927-59550	1	PIPE ASSY FUEL RETURN WITH CLAMPS
7	129457-59010	1	PIPE ASSY FUEL WITH CLAMPS
8	121750-59890	1	CLAMP #40
9	129961-59310	1	PIPE ASSY FUEL WITH CLAMPS
10	123907-55801	1	FUEL FILTER ELEMENT
11	129004-55612	1	BRACKET FUEL FILTER
12	26106-080302	2	BOLT, M8 X 30 PLATED
13	129242-55700	1	FUEL WATER SEPERATOR COMPLETE ASSY
14	119225-52102	1	PUMP ASSEMBLY, FUEL FEED
15	129242-55730	1	FUEL WATER SEPERATOR ELEMENT

Note: The fuel system needs to be primed under certain conditions.

\*Before starting the engine for the first time

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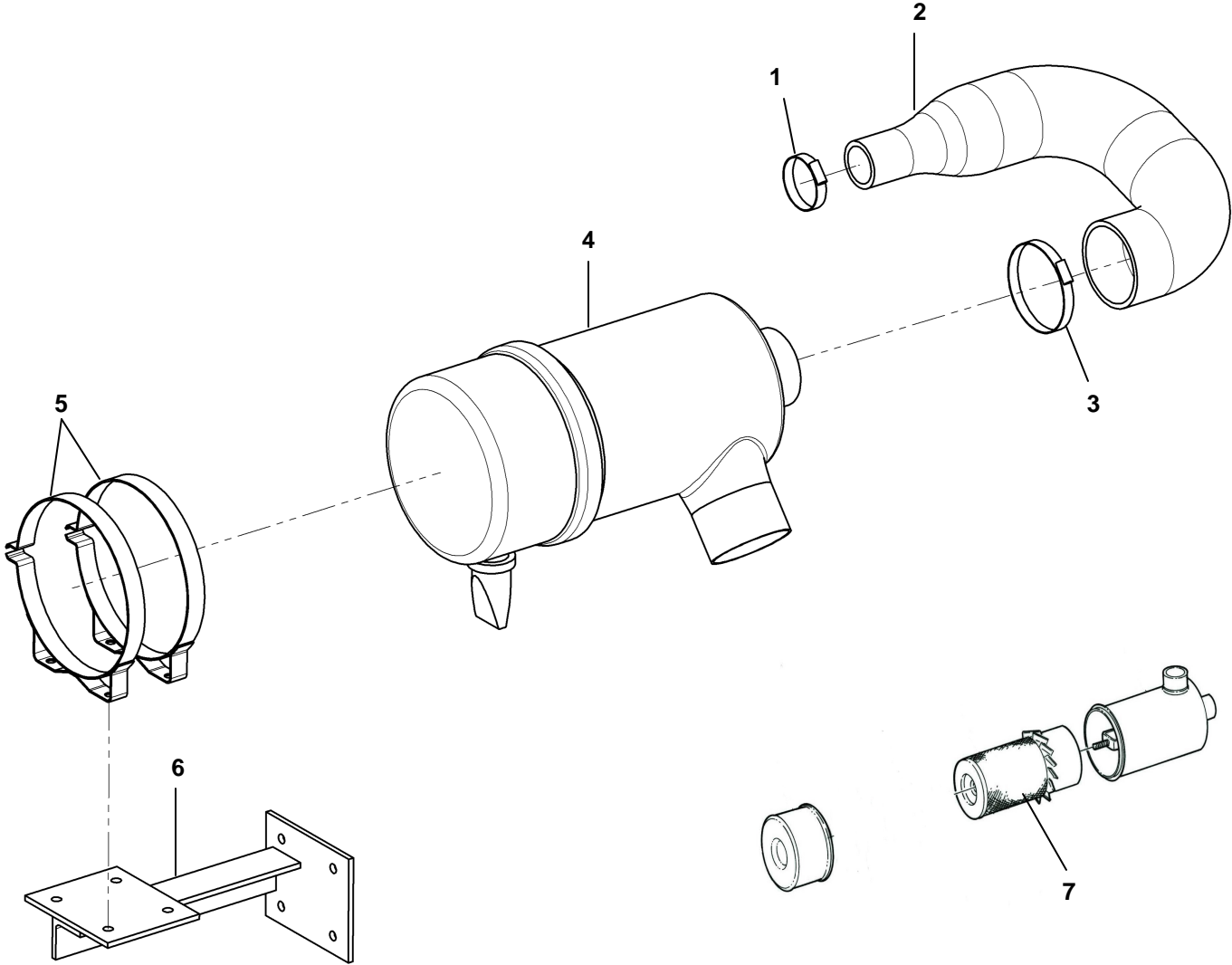
\*After fuel system maintenance such as changing the fuel filter and draining the fuel/water separator, or replacing a fuel system component

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# AIR CLEANER

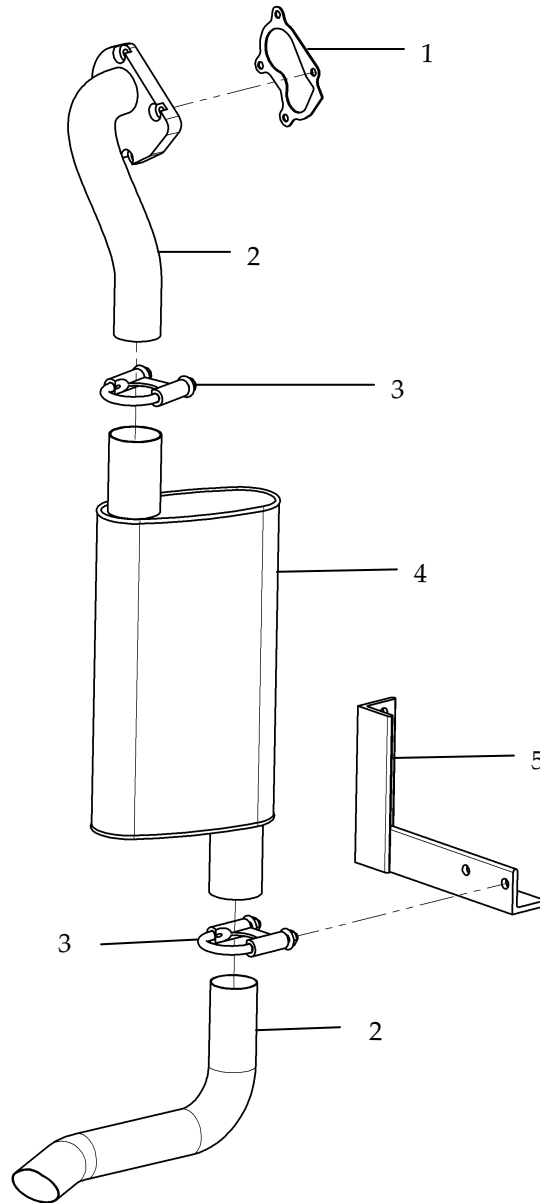
## AIR CLEANER ASSEMBLY



Item	Part Number	Qty	Description
1	NPN	1	#40 HOSE CLAMP
2	A-TT10-00093	1	AIR INTAKE ADAPTER
3	NPN	1	#60 HOSE CLAMP
4	A-TT4-00091-2	1	AIR CLEANER
5	A-TT4-00092-1	2	AIR CLEANER BRACKET
6	A-TT12Y-00092	1	AIR CLEANER SUPPORT BRACKET
7	P601437	1	AIR CLEANER ELEMENT
8	A-TT4-00098-2	1	RAIN CAP (NOT SHOWN)

# EXHAUST & INTAKE SYSTEM

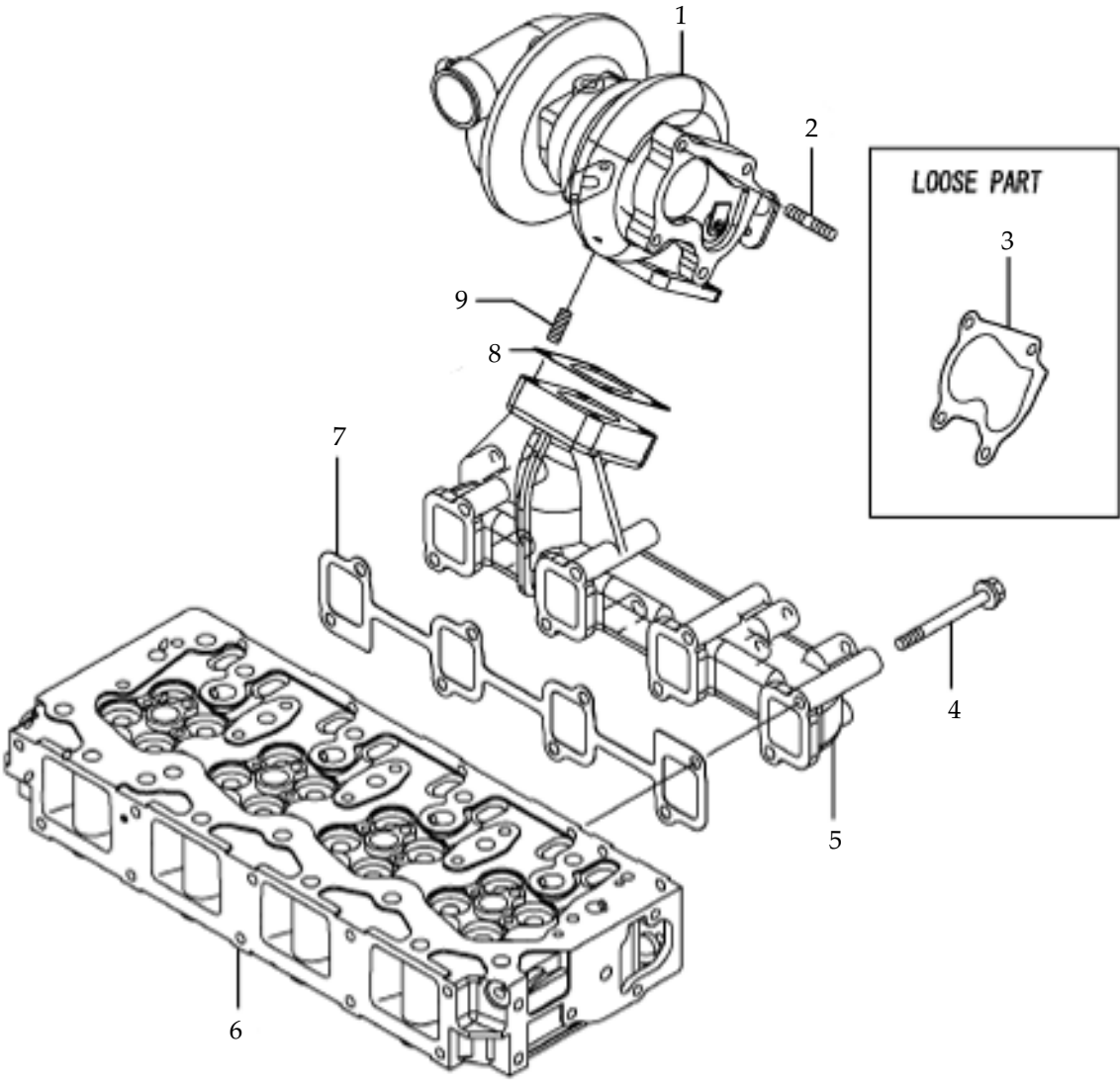
## EXHAUST SYSTEM



Item	Part Number	Qty	Description
1	123901-18080	1	EXHAUST GASKET
2	A-TT10TD-00253-2	1	2PC EXHAUST/TAIL PIPE
3	A-TT4-00254	2	EXHAUST CLAMP 2"HD 3/8 THREAD
4	A-TT4-00258-1	1	MUFFLER
5	A-TT12Y-00252	1	EXHAUST BRACKET "L" YANMAR TURBO
N/S	NPN	2	HCS, M10-1.5x25 (ITEM 5 TO ENGINE)
N/S	NPN	2	LOCK WASHER, M10 (ITEM 5 TO ENGINE)

# EXHAUST & INTAKE SYSTEM

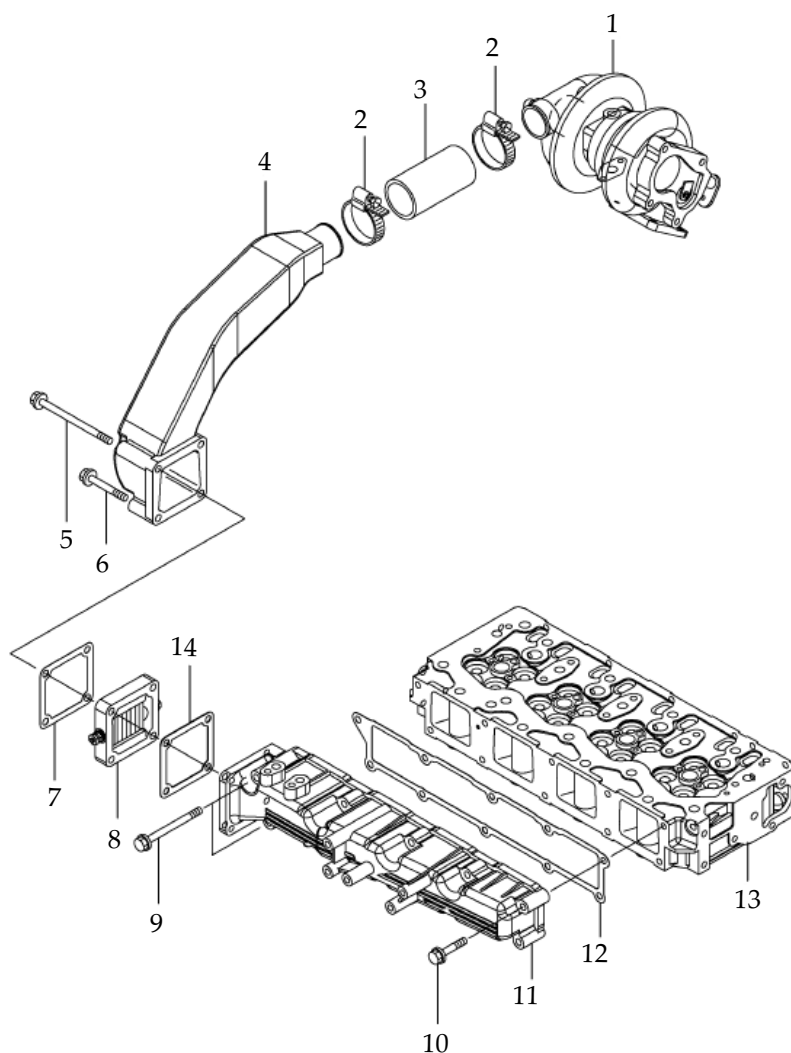
## EXHAUST MANIFOLD—YANMAR TIER II DIESEL



Item	Part Number	Qty	Description
1	129935-18010	1	TURBO CHARGER
2	119131-18320	4	BOLT M 8X22
3	123901-18080	1	EXH GASKET(ALSO SHOWN ON PG 101)
4	123900-13630	8	BOLT M8X80
5	129935-13100	1	EXHAUST MANIFOLD
6	129928-11700	1	CYLINDER HEAD ASSEMBLY
7	129900-13251	1	EXHAUST MANIFOLD GASKET
8	129472-18090	1	GASKET
9	129418-18320	4	STUD BOLT M8X20

# EXHAUST & INTAKE SYSTEM

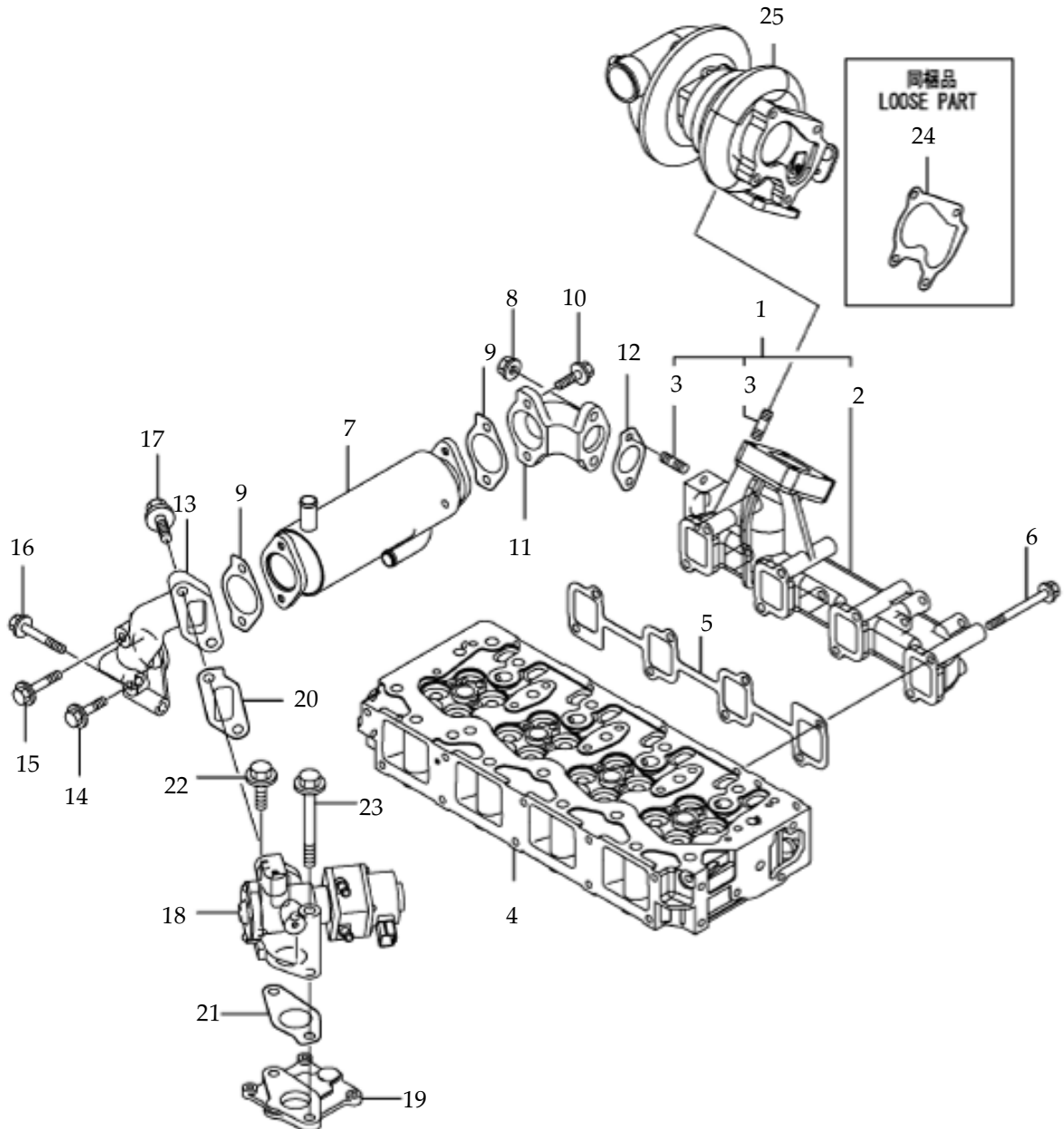
## INTAKE MANIFOLD—YANMAR TIER II DIESEL



Item	Part Number	Qty	Description
1	129935-18010	1	TURBO CHARGER
2	23000-054000	2	CLAMP
3	123951-18220	1	JOINT B
4	129935-18350	1	AIR INTAKE DUCT
5	26106-080902	2	BOLT M8X90 PLATED
6	26106-080702	2	BOLT M8 X 70 PLATED
7	119129-77020	1	GASKET
8	119005-77050	1	AIR HEATER
9	26106-080802	2	BOLT M8X80 PLATED
10	26106-080452	8	BOLT M8X45 PLATED
11	129944-12110	1	INTAKE MANIFOLD
12	129907-12110	1	INTAKE MANIFOLD GASKET
13	129908-11700	1	CYLINDER HEAD ASSEMBLY
14	121850-77021	1	GASKET

# EXHAUST & INTAKE SYSTEM

## EXHAUST MANIFOLD – YANMAR TIER III DIESEL





# EXHAUST & INTAKE SYSTEM

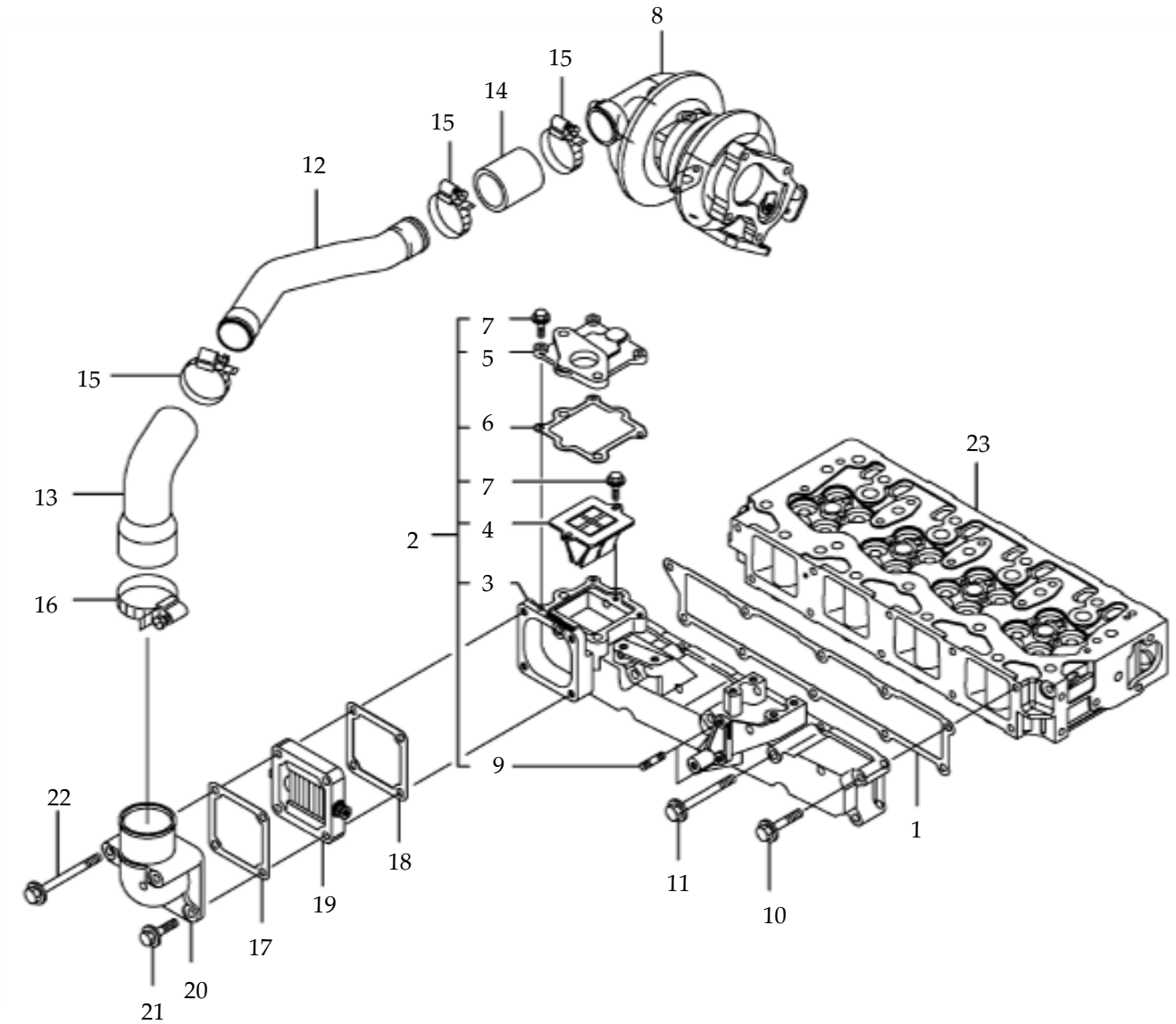
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## EXHAUST MANIFOLD – YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	129928-13150	1	EXHAUST MANIFOLD ASSY INC ITEMS 1-3
2	129928-13100	1	EXHAUST MANIFOLD
3	129418-18320	6	STUD, M8X20
4	129928-11700	1	CYLINDER HEAD ASSY
5	129900-13251	1	GASKET, EXHAUST MANIFOLD
6	123900-13630	8	BOLT M8X80
7	129928-13400	1	COOLER, ERG
8	26306-080002	2	NUT M8
9	129928-13410	2	STUD
10	119802-13790	2	BOLT M8X25
11	129948-13800	1	PIPE
12	129927-13810	1	PIPE GASKET
13	129948-13810	1	PIPE
14	26106-080352	1	BOLT M8X35 PLATED
15	26106-080452	1	BOLT M8X45 PLATED
16	26106-080552	2	BOLT M8X45 PLATED
17	26106-100252	2	BOLT, M10X25 PLATED
18	129927-13900	1	VALVE, EGR
19	129927-13910	1	GASKET
20	129927-13920	1	GASKET
21	26106-100402	1	BOLT M10X40 PLATED
22	26106-100402	1	BOLT M10X40 PLATED
23	26106-101052	1	BOLT M10X105 PLATED
24	123901-18080	1	EXH GASKET(ALSO SHOWN ON PG 101)
25	129935-18010	1	TURBO CHARGER

# EXHAUST & INTAKE SYSTEM

## INTAKE MANIFOLD—YANMAR TIER III DIESEL



# EXHAUST & INTAKE SYSTEM

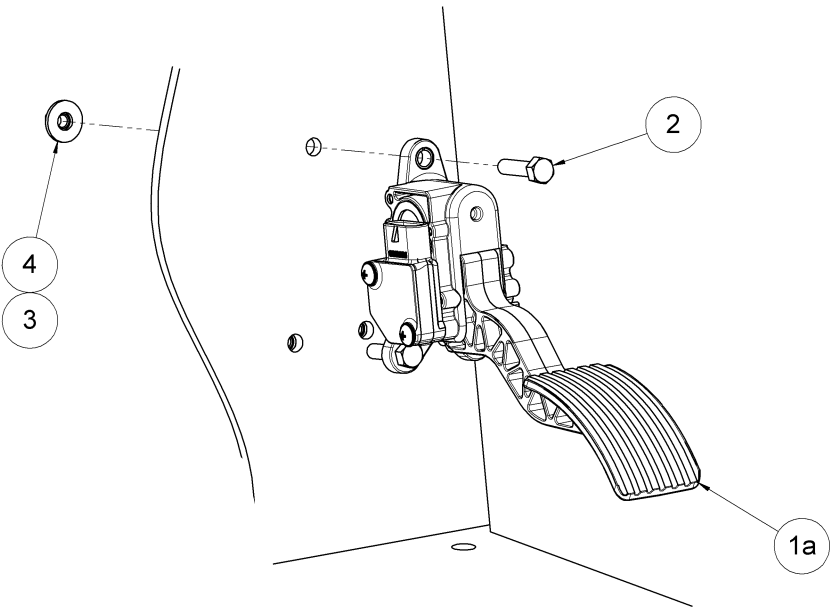
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## INTAKE MANIFOLD—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	129907-12110	1	INTAKE MANIFOLD GASKET
2	129928-12150	1	INTAKE MANIFOLD ASSY INC ITEMS 3-7 & 9
3	129928-12100	1	INTAKE MANIFOLD ONLY
4	129928-13700	1	VALVE
5	129928-13710	1	VALVE SPACER
6	129928-13720	1	GASKET
7	26106-060202	5	BOLT, M6 X 20 PLATED
8	129935-18010	1	TURBO CHARGER
9	26216-060202	2	STUD M6 X 20 PLATED
10	26106-080452	6	BOLT, M8 X 45 PLATED
11	26106-080802	4	BOLT, M8 X 80 PLATED
12	129928-18200	1	AIR DUCT
13	129974-18210	1	JOINT, RUBBER
14	123951-18220	1	JOINT, RUBBER
15	23000-054000	3	CLAMP 54
16	23000-080000	1	CLAMP 80
17	119129-77020	1	GASKET
18	121850-77021	1	GASKET
19	119005-77051	1	AIR HEATER
20	119129-77520	1	BEND
21	26106-080402	2	BOLT, M8 X 40 PLATED
22	26106-080902	2	BOLT, M8 X 90 PLATED
23	129928-11700	1	HEAD ASSY

# OPERATOR COMPARTMENT

## ACCELERATOR PEDAL ASSEMBLY-TIER III DIESEL



PEDALS SHOWN BELOW  
ARE OBSOLETE

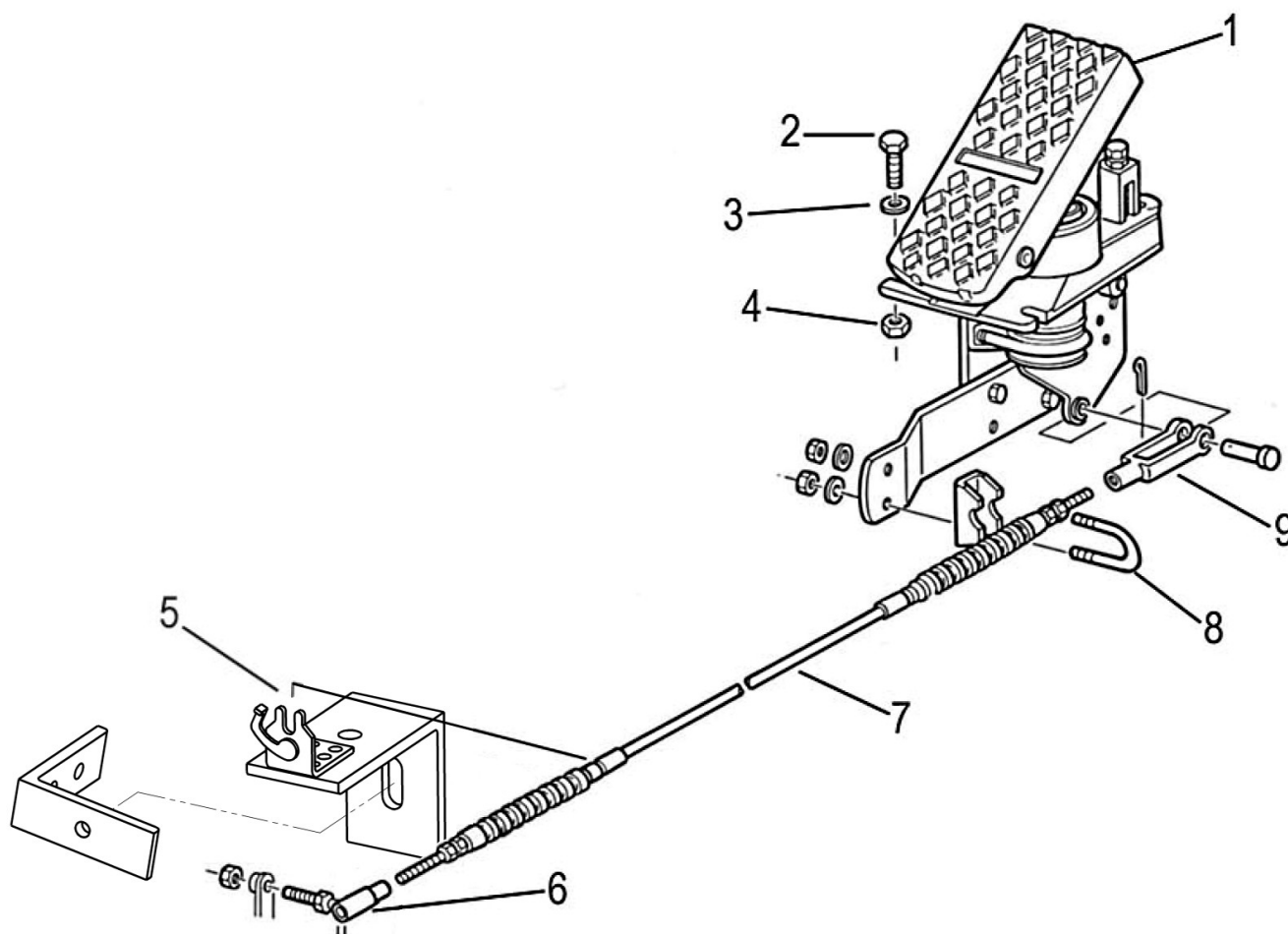
NOTE ATTACHED WIRING.  
FOR REPLACEMENT, ORDER  
ITEM 1a

NOTE PEDAL STYLE.  
FOR REPLACEMENT, ORDER  
ITEM 1b.

Item	Part Number	Qty.	Description
1a	NVSP-14-028-KA	1	THROTTLE PEDAL, DUAL ANALOG (INCLUDES ADAPTOR HARNESS)
1b	NVSP-14-032-KA	-	THROTTLE PEDAL, DUAL ANALOG (INCLUDES ADAPTOR HARNESS)
2	NPN	3	HCS, 5/16-18 UNC X 1.25
3	NPN	3	FLAT WASHER, 5/16
4	NPN	3	LOCK NUT, 5/16-18 UNC

# OPERATOR COMPARTMENT

## ACCELERATOR PEDAL ASSEMBLY – YANMAR TIER II DIESEL

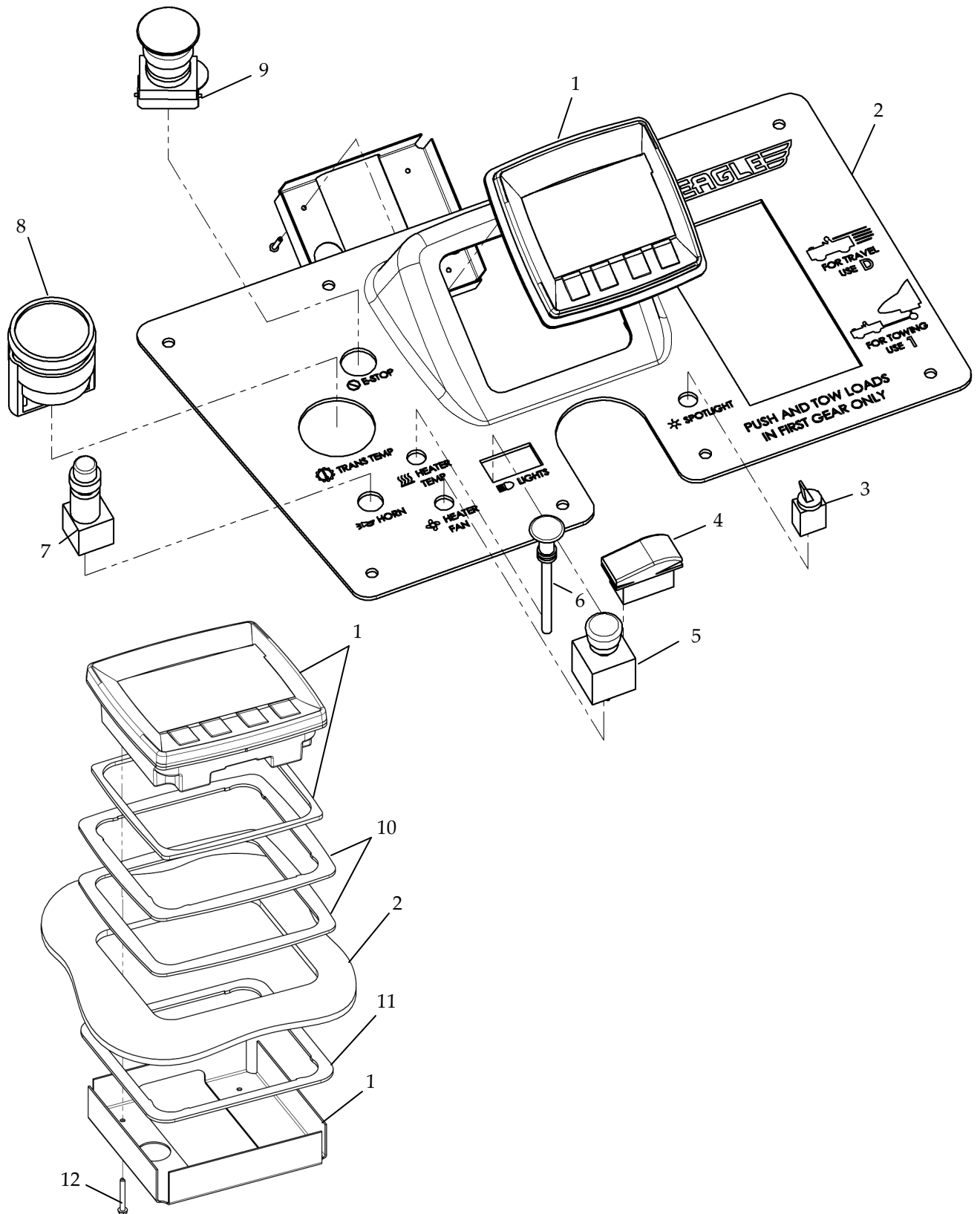


Item	Part Number	Qty	Description
1	A-TT4-00281-1	1	FOOT PEDAL ASSEMBLY
2	NPN	3	SCREW-HEX CAP-1/4-20 X 1.00 G5
3	NPN	3	WASHER-FLAT-1/4
4	NPN	3	NUT-LOCK-1/4-20
5	A-TT4-00285*	1	ACCEL CABLE BRACKET
6	A-TT4-00287	1	BALL JOINT KIT - NUT INCLUDED
7	A-TT10-00282-1	1	ACCELERATOR CABLE ASSEMBLY
8	A-TT4-00247	1	ACCELERATOR U-BOLT KIT
9	A-TT4-00283-1	1	ACCELERATOR CLEVIS-PIN KIT

\*TUG MODEL AND SERIAL NUMBER REQUIRED TO ORDER THIS PART

# OPERATOR COMPARTMENT

## INSTRUMENT PANEL - SAUER DANFOSS DISPLAY/CONTROLLER



# OPERATOR COMPARTMENT

## INSTRUMENT PANEL - SAUER DANFOSS DISPLAY/CONTROLLER

Item	Part Number	Qty	Description
1	A-TT8-00417	1	TT ELECTRONIC DISPLAY
2	C-TT4-00411-1	1	DASH PANEL (NO INSTRUMENTS)
3	A-TT4-00433-1	1	SPOTLIGHT TOGGLE SWITCH(OPTIONAL)
4	A-TT4-00423-2	1	HEADLIGHT SWITCH
5	A-TT4-00609	1	HEATER FAN SWITCH(OPTIONAL)
6	A-TT4-00608	1	HEATER CONTROL CABLE(OPTIONAL)
7	A-TT4-00428	1	HORN BUTTON
8	AE-OPT-0152	1	TRANS TEMP GAUGE (OPTIONAL)
9	AE-OPT-0066	1	E-STOP (OPTIONAL)
10	A-TT8-00421	1	SAUER MOUNTING KIT
11	A-TT8-00418	1	DISPLAY MOUNTING RING
12	A-TT8-00413	4	M3X20 DISPLAY MOUNTING SCREW NOTE: MUST BE INSTALLED WITH THREAD LUBRICANT
N/S	NVSP-14-025-SA	1	KEY SWITCH BRACKET
N/S	NVSP-05-005-CA	1	SEALED KEY SWITCH, 3-POSITION
N/S	NVSP-05-005-CB	1	SEALED KEYLESS SWITCH, 3-POSITION (OPTIONAL)

## Eagle Tugs TT-series Quick Start Guide

### Powering up the tractor:

Verify that the transmission is in "Park" or "Neutral."

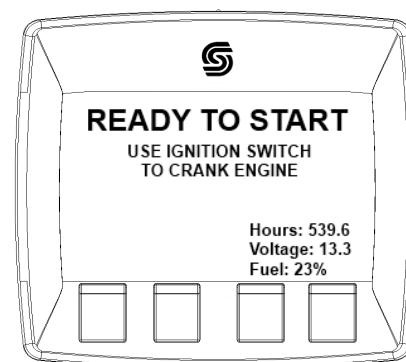
Verify that the parking brake has been set.

Turn the ignition switch to the "ON" position.

### Starting the Engine:

Once the Sauer display panel has booted up, it will prompt you to turn the ignition switch to crank the engine.

*\*For cold weather operation, the display will prompt you to wait for the engine warm-up before prompting you to crank the engine.*



### Turning off the Engine:

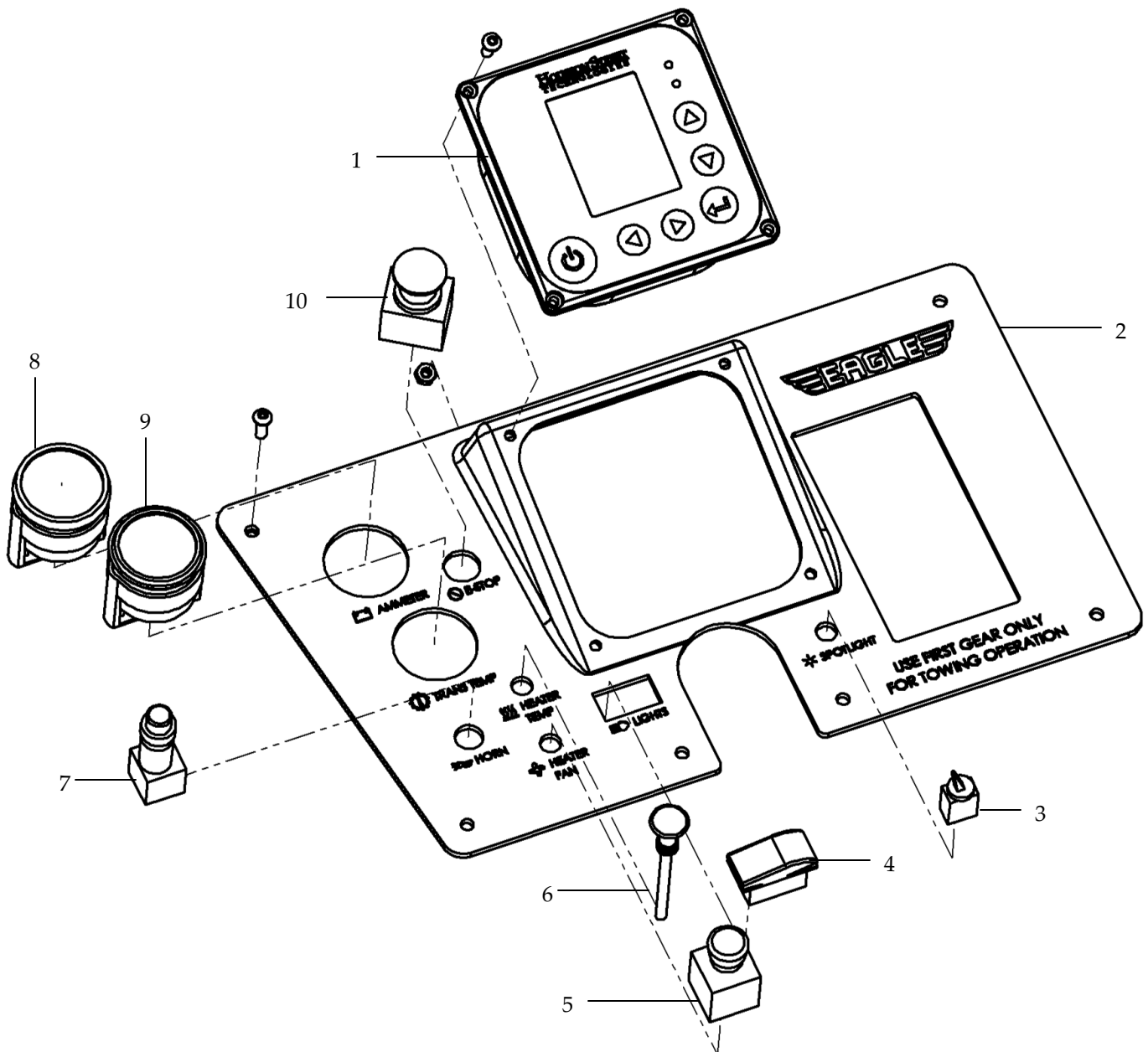
Bring the tractor to a complete stop.

Set the parking brake.

Turn the ignition switch to the "OFF" position.

# OPERATOR COMPARTMENT

INSTRUMENT PANEL - H30 DISPLAY/CONTROLLER - NO LONGER AVAILABLE





# OPERATOR COMPARTMENT

## INSTRUMENT PANEL - H30 DISPLAY/CONTROLLER - NO LONGER AVAILABLE

Item	Part Number	Qty	Description
1	A-TT8-00415	1	ELECTRONIC CONTROLLER DISPLAY
2	C-TT4-00411-1	1	DASH PANEL (NO INSTRUMENTS)
3	A-TT4-00433-1	1	SPOTLIGHT TOGGLE SWITCH(OPTIONAL)
4	A-TT4-00423-2	1	HEADLIGHT SWITCH
5	A-TT4-00609	1	HEATER FAN SWITCH(OPTIONAL)
6	A-TT4-00608	1	HEATER CONTROL CABLE(OPTIONAL)
7	A-TT4-00428	1	HORN BUTTON
8	AE-OPT-0084	1	AMMETER GUAGE (OPTIONAL)
9	AE-OPT-0152	1	TRANS TEMP GAUGE (OPTIONAL)
10	AE-OPT-0066	1	E-STOP (OPTIONAL)

## Eagle Tugs TT-series Quick Start Guide

### Powering up the H30 Display Panel:

Pressing the **POWER** button will turn on the H30 control panel

\*On key ignition equipped units, turn the key to the on position  
And then press the **POWER** button.

### Starting the Engine:

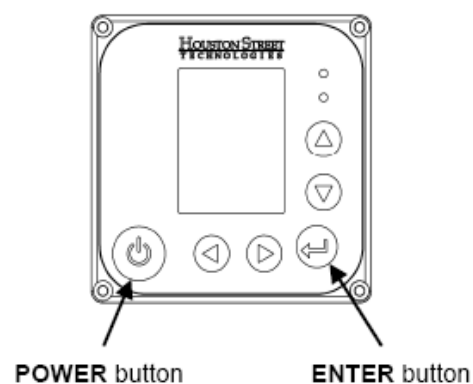
Once the H30 panel has booted up, it will prompt you to hold the **ENTER** key to crank the engine. Hold the **ENTER** key until the unit starts.

\*For cold weather operation, the display will prompt you to wait for the engine warm-up before prompting you to crank the engine.

### Turning off the Engine:

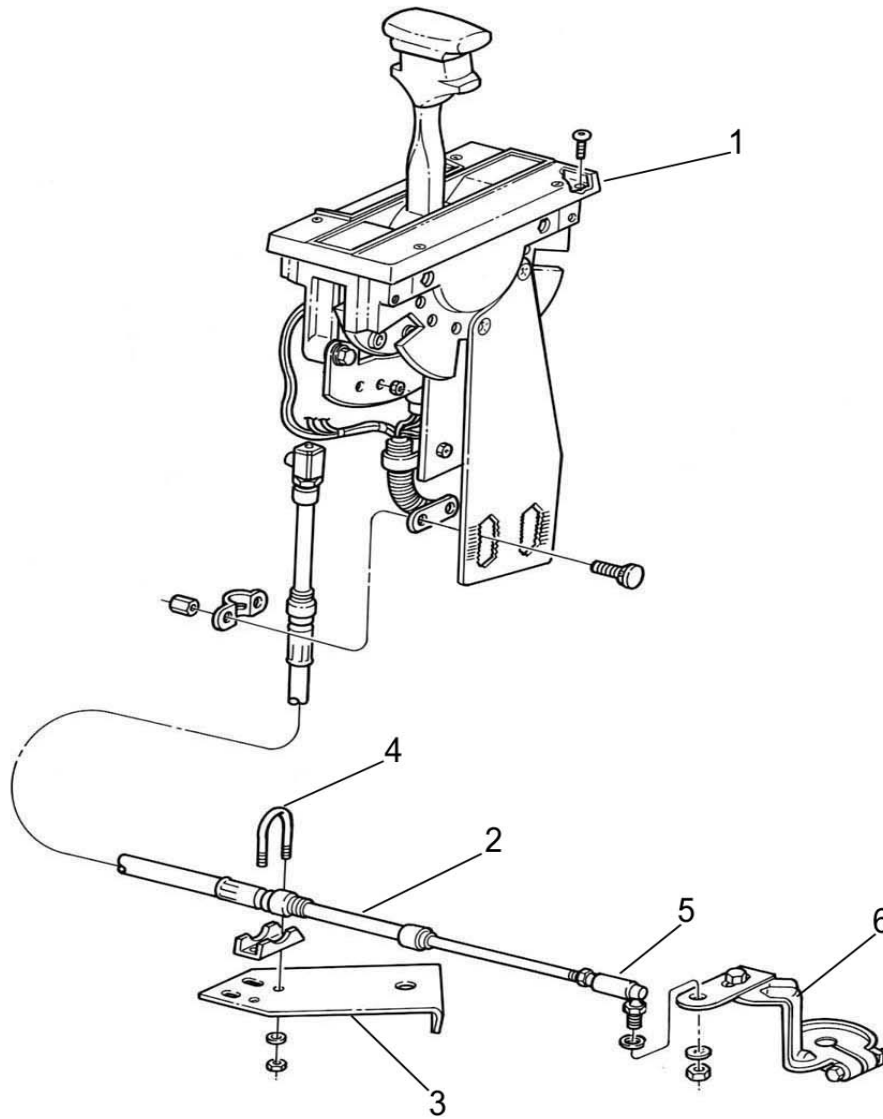
To turn off the engine, press the **POWER** button.

\*On key ignition equipped units, turn the key to the off position after the display panel has turned off.



# OPERATOR COMPARTMENT

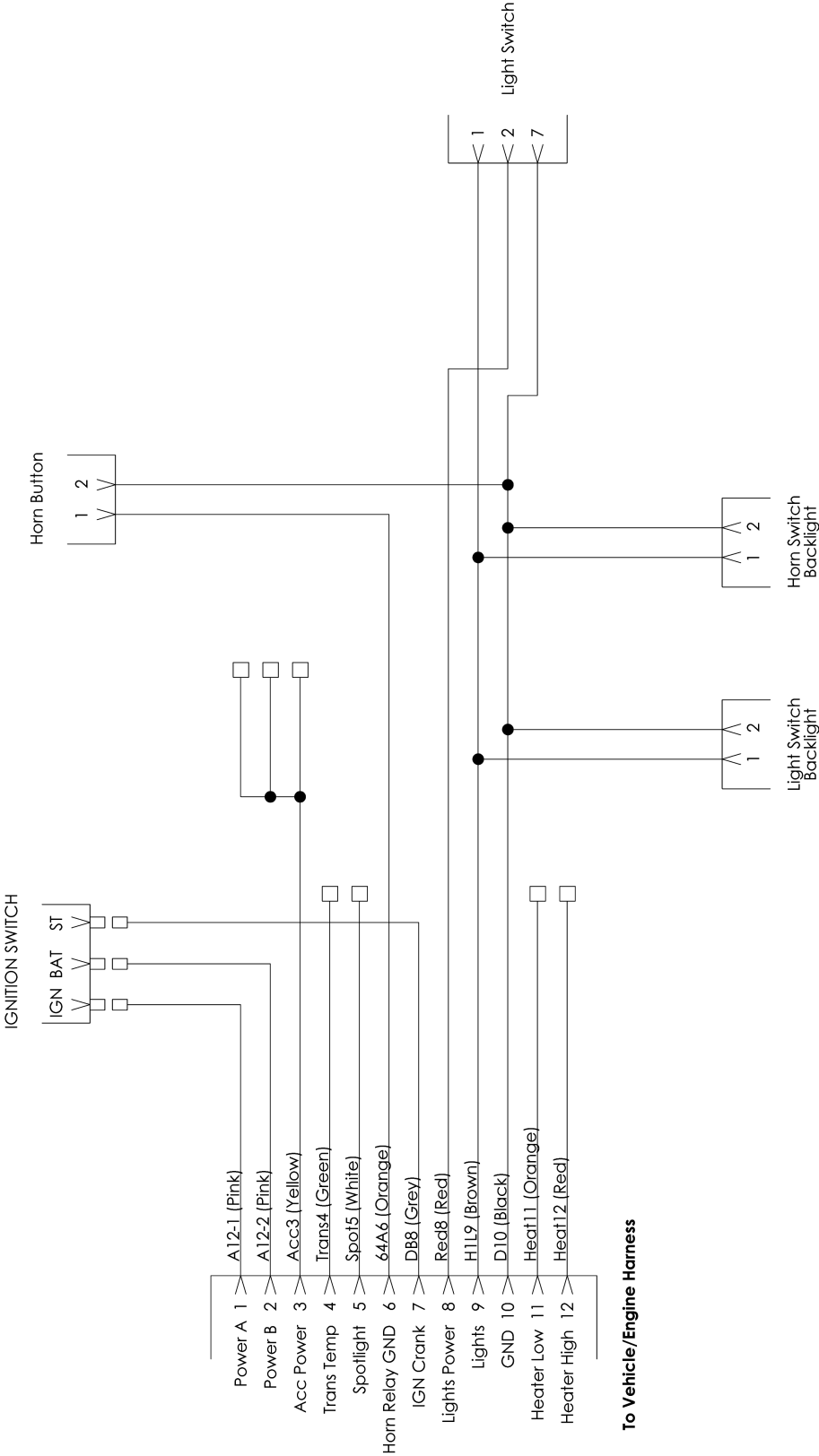
## TRANSMISSION CONTROL



Item	Part Number	Qty	Description
1	A-TT4-00245	1	TRANSMISSION SHIFT CONTROL
2	A-TT4-00246	1	TRANSMISSION SHIFT CABLE 120'
3	A-TT4-00248	1	TRANSMISSION CABLE BRACKET ASSEMBLY
4	A-TT4-00247	1	U-BOLT KIT
5	A-TT4-00249	1	BALL JOINT KIT
6	A-TT4-00419	1	TRANSMISSION LEVER
7	302008	1	INDICATOR STRIP REPAIR KIT(NS)
8	302348	1	HANDLE REPAIR KIT(NS)

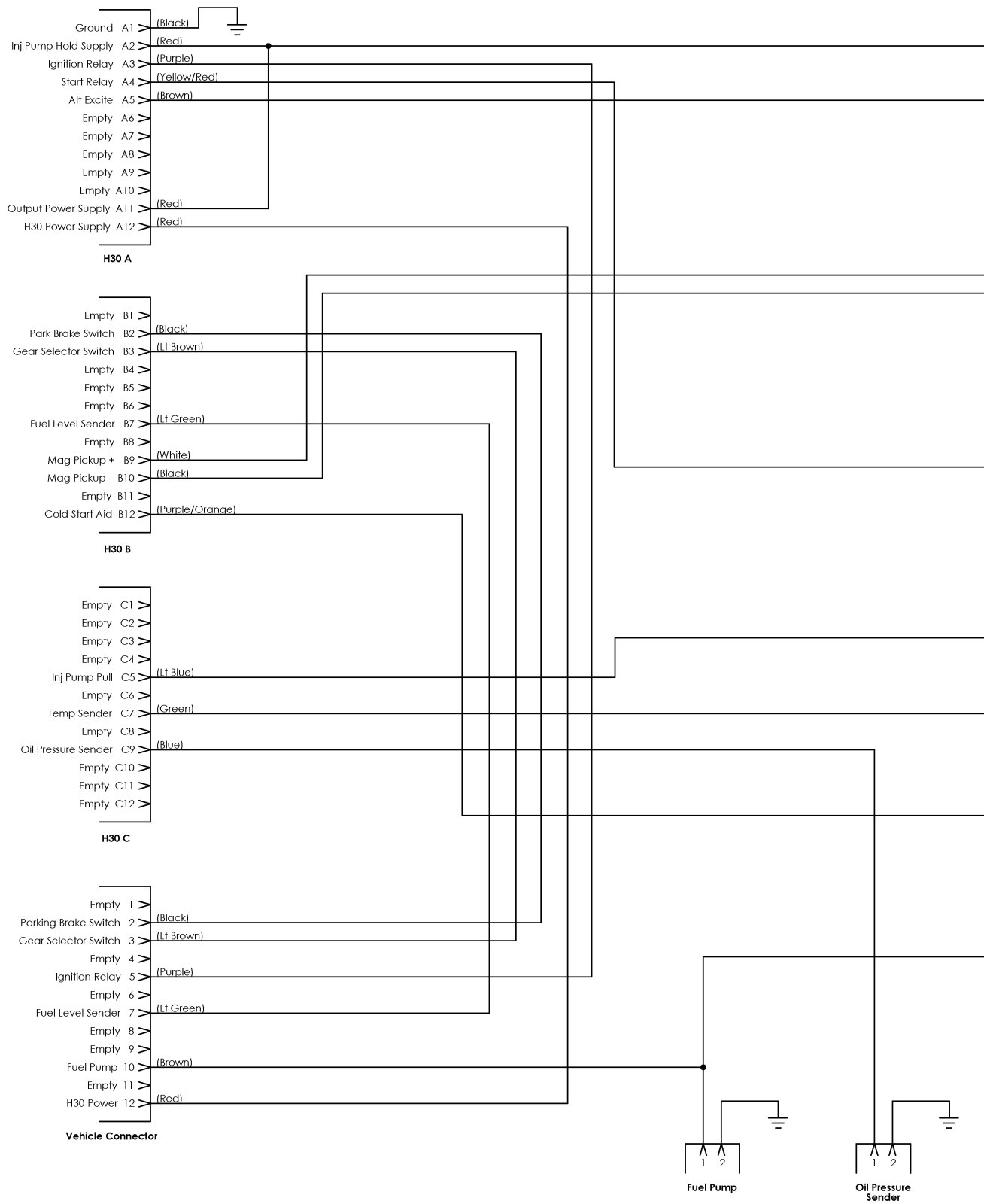
# ELECTRICAL SCHEMATICS

## DASH WIRING HARNESS



# ELECTRICAL SCHEMATICS

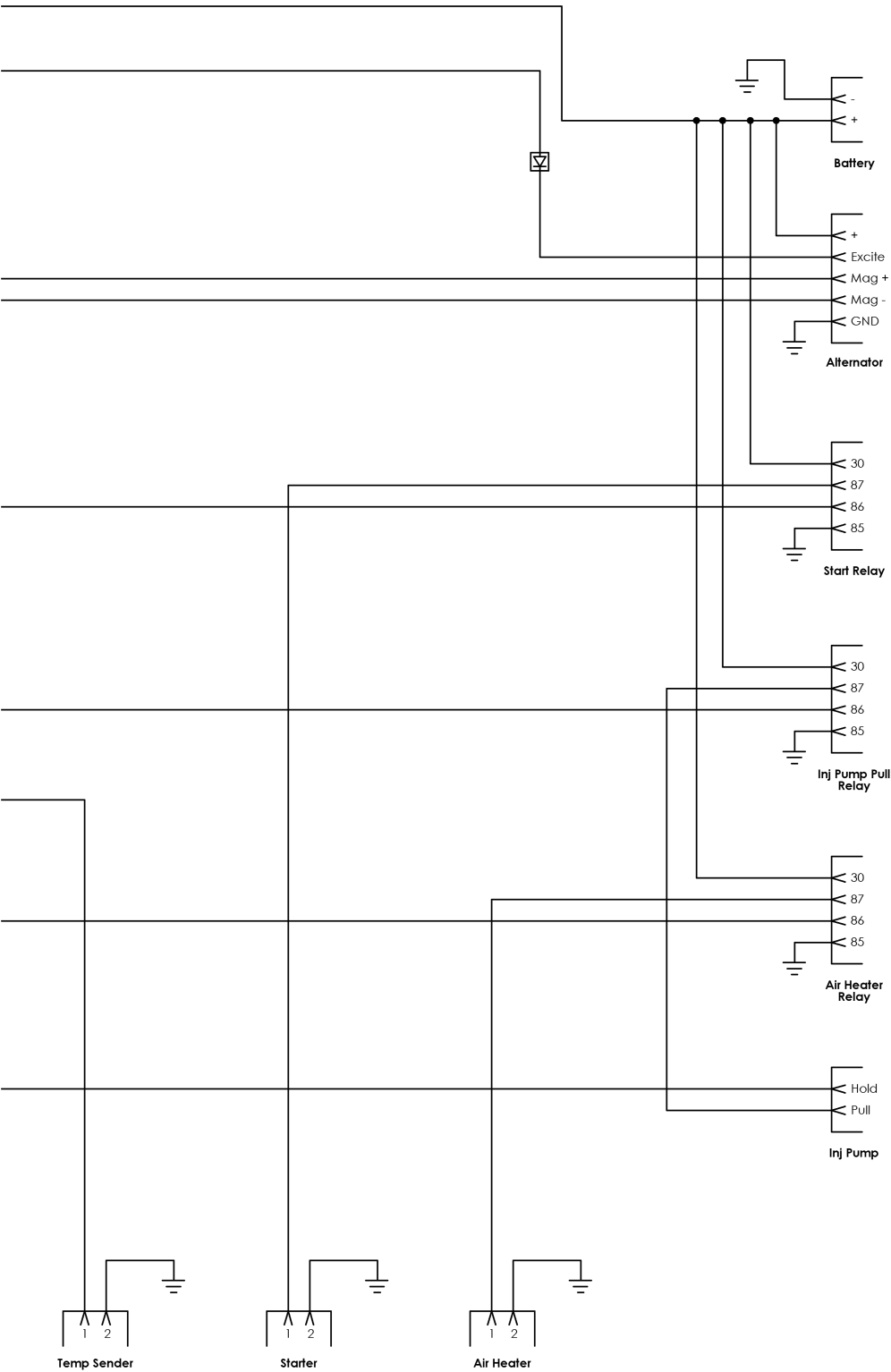
## YANMAR ENGINE WIRING HARNESS – YANMAR TIER II DIESEL



Engine Wiring Harness,  
Tier 2, 4TNV98

# ELECTRICAL SCHEMATICS

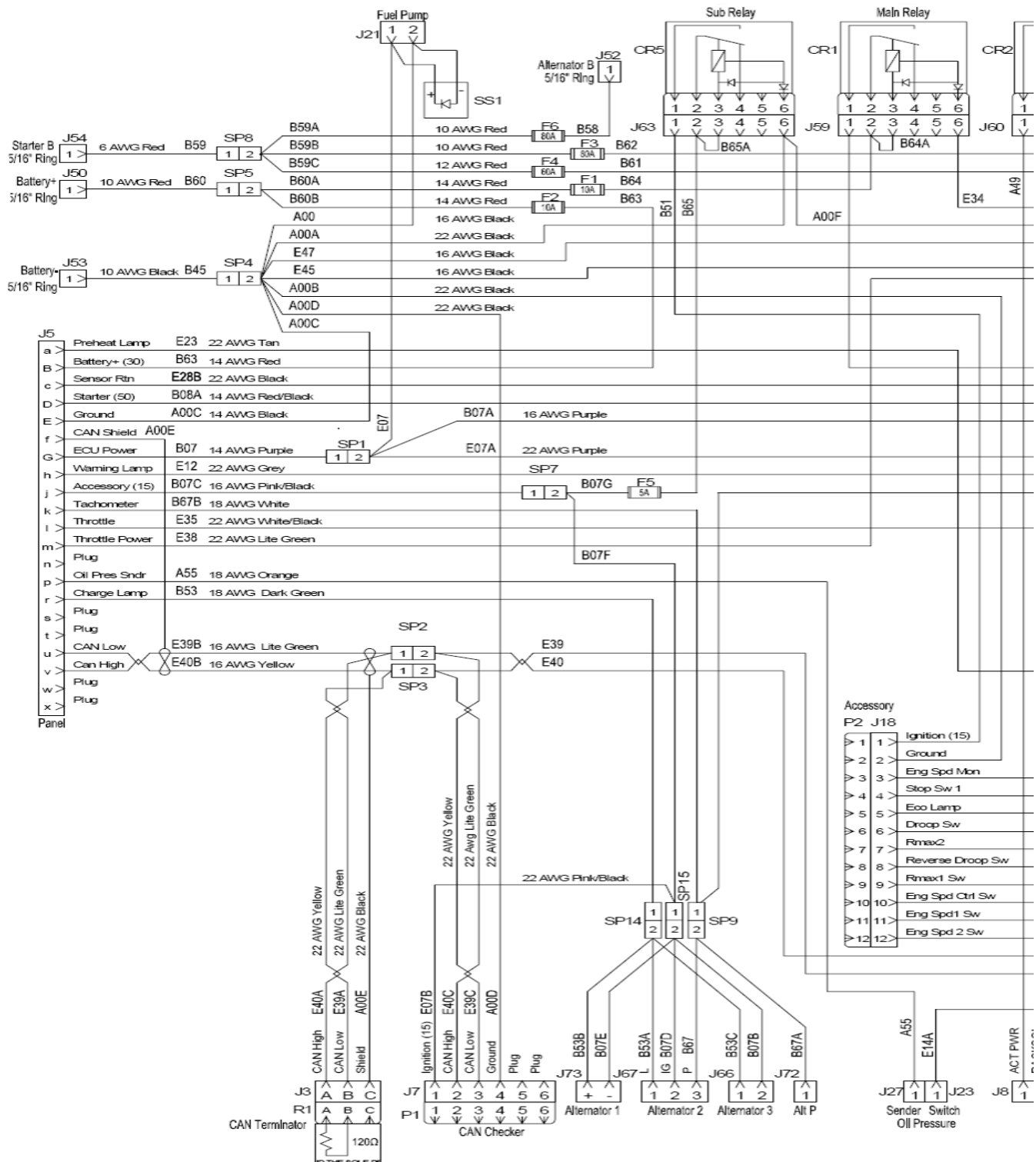
## YANMAR ENGINE WIRING HARNESS — YANMAR TIER II DIESEL



# ELECTRICAL SCHEMATICS

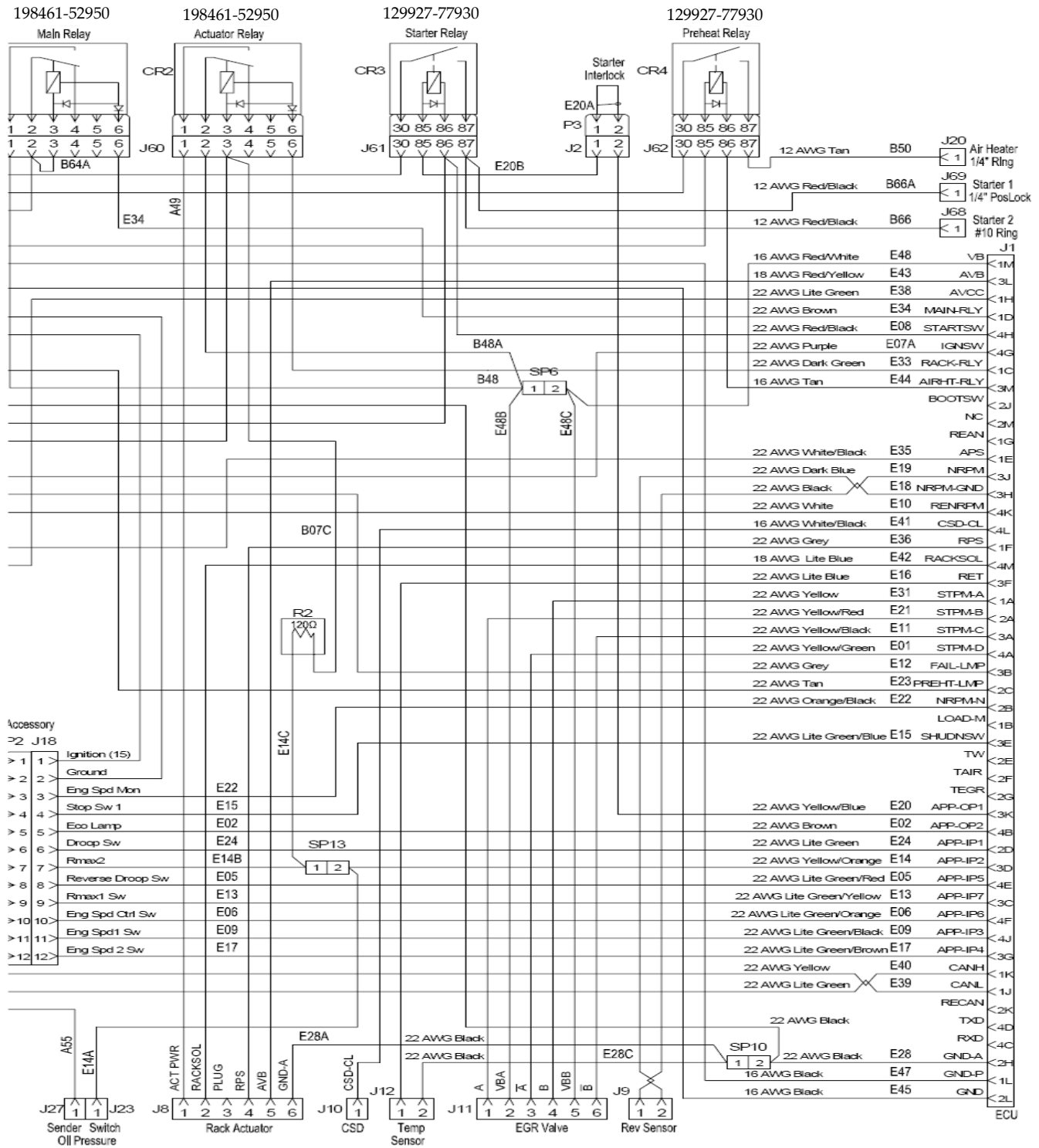
## YANMAR ENGINE WIRING HARNESS — YANMAR TIER III DIESEL

198461-52950



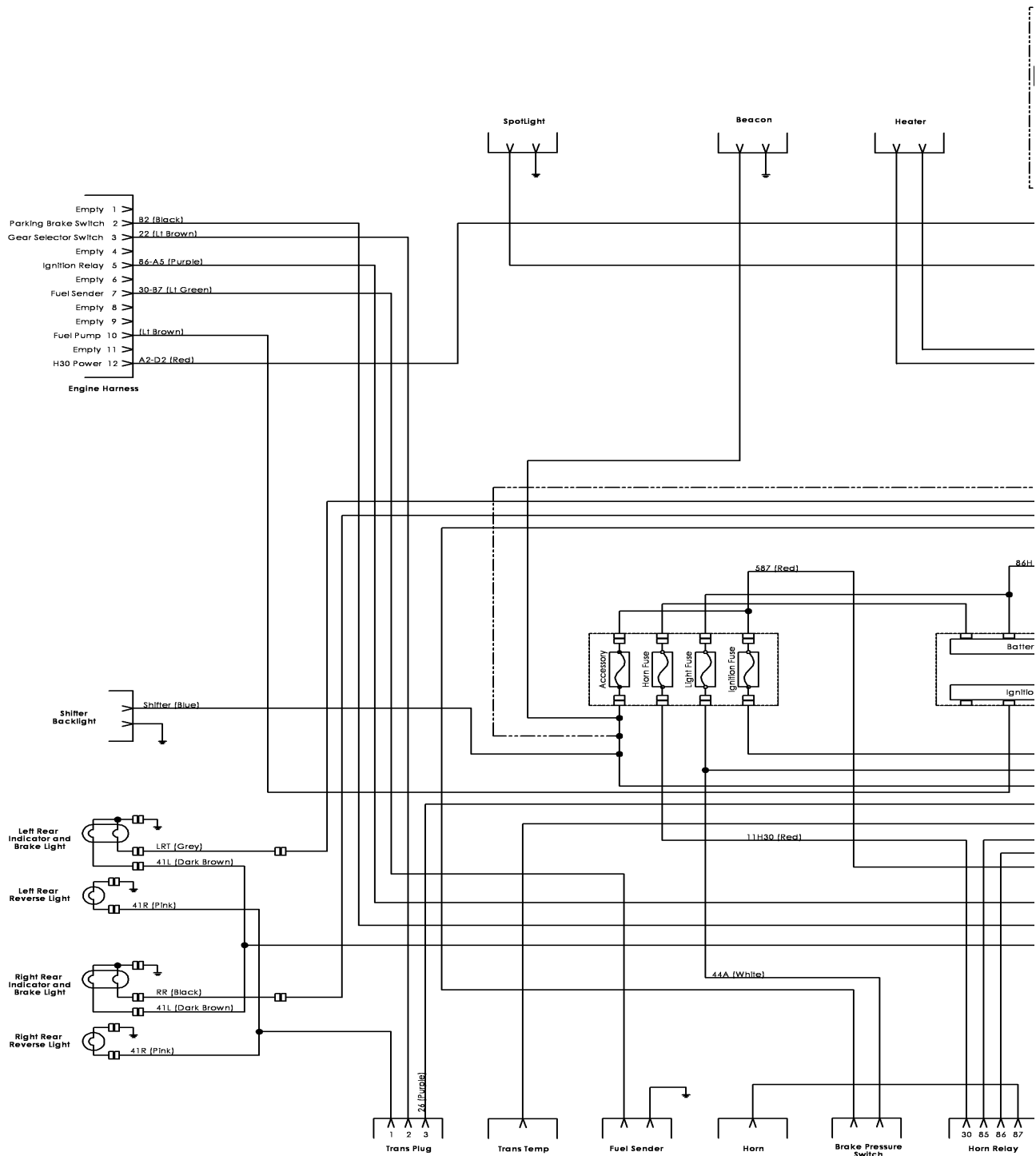
# ELECTRICAL SCHEMATICS

## YANMAR ENGINE WIRING HARNESS — YANMAR TIER III DIESEL



# ELECTRICAL SCHEMATICS

## VEHICLE WIRING HARNESS – YANMAR TIER II DIESEL

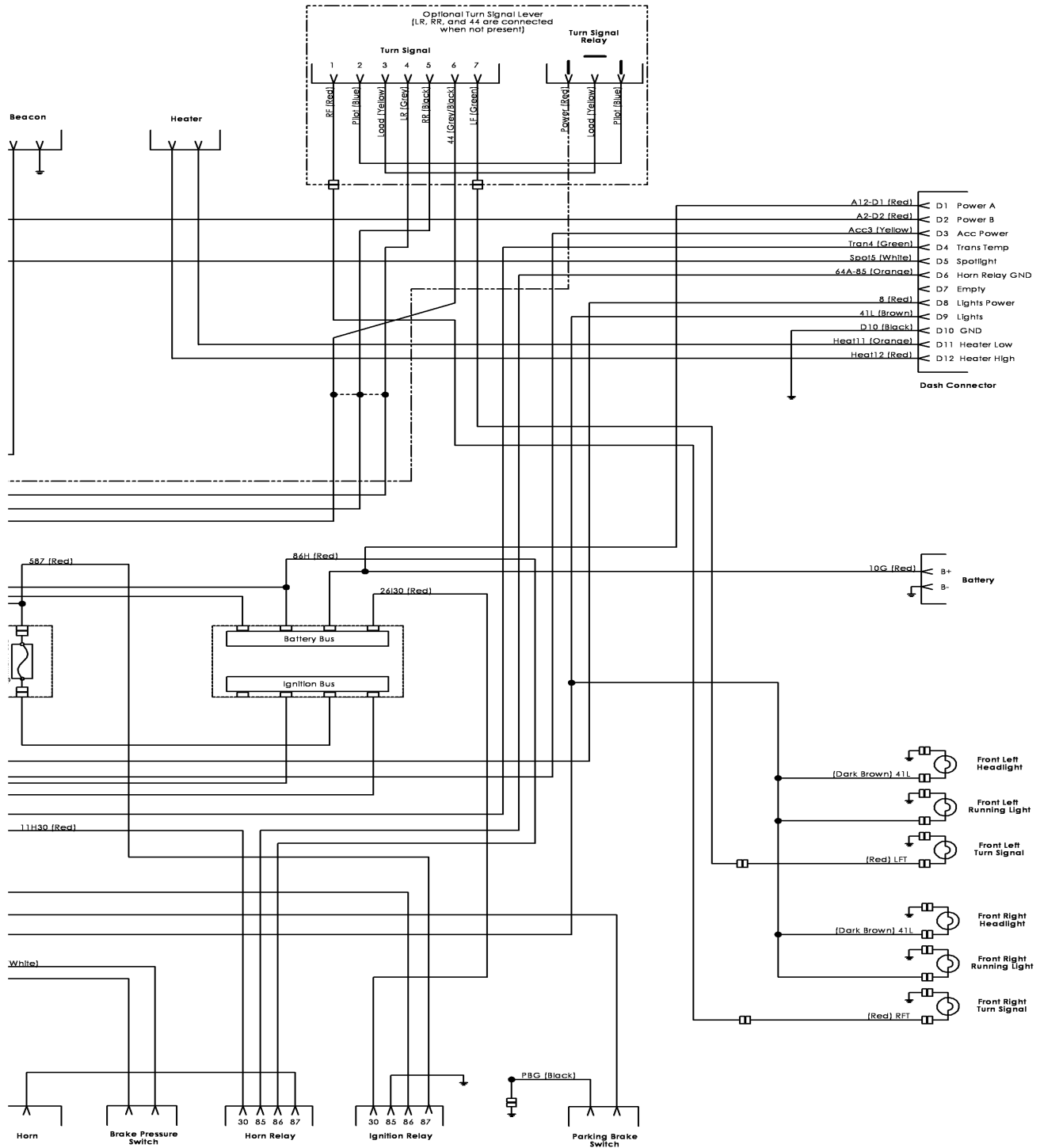


Vehicle Harness, Tier2 4TNV98



# ELECTRICAL SCHEMATICS

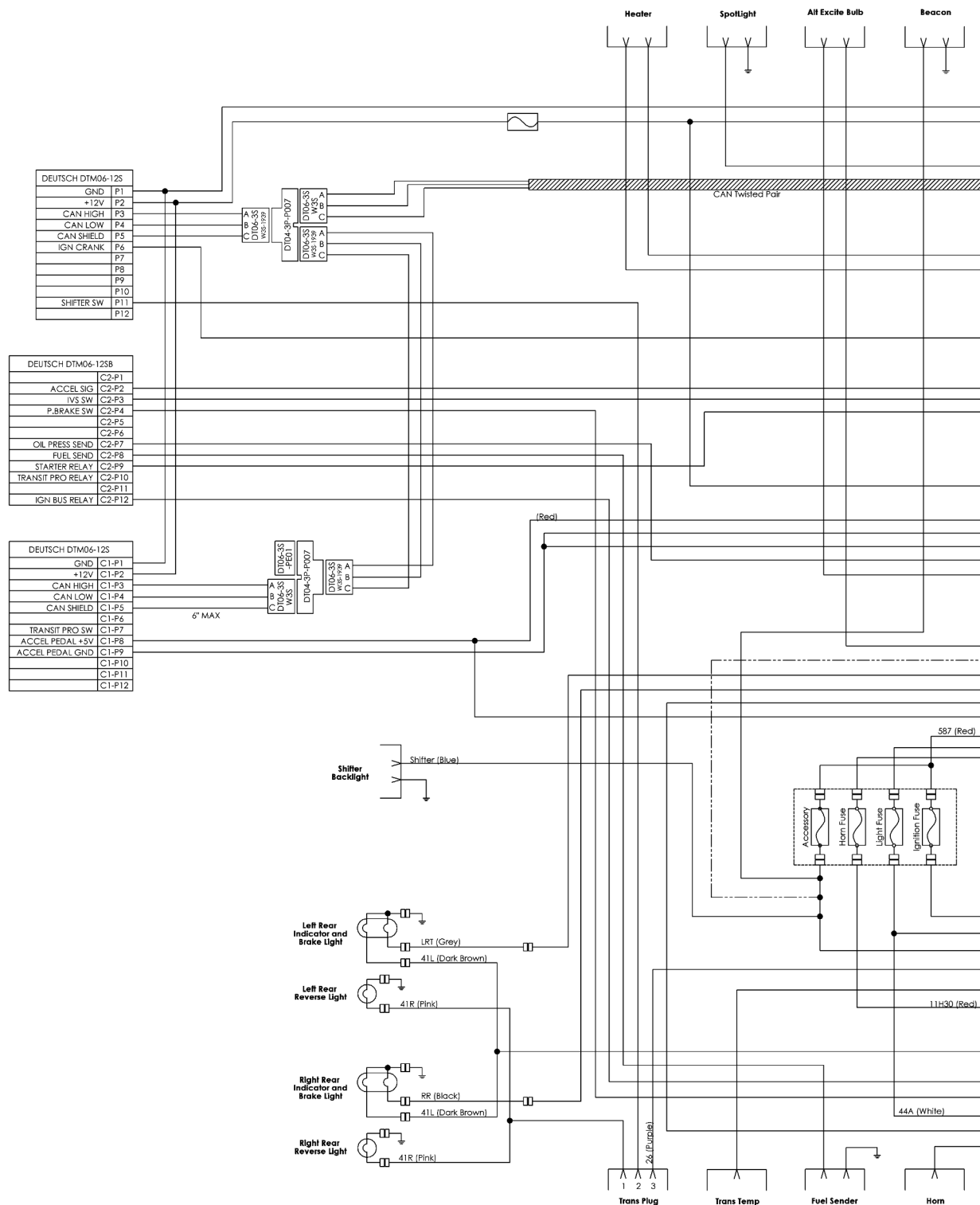
## VEHICLE WIRING HARNESS – YANMAR TIER II DIESEL



Vehicle Harness, Tier2 4TNV98

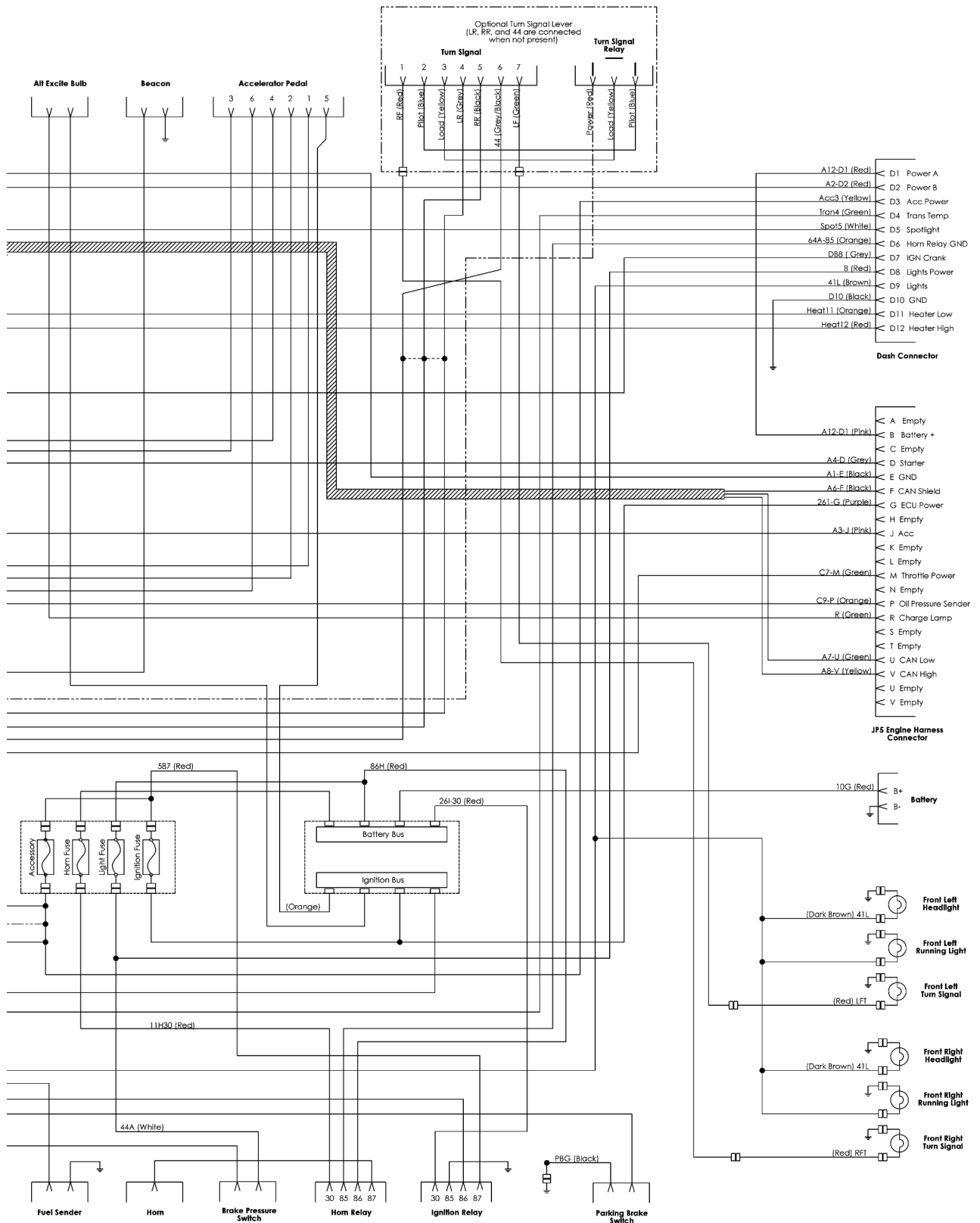
# ELECTRICAL SCHEMATICS

## VEHICLE WIRING HARNESS – YANMAR TIER III DIESEL (PRIOR TO 10/2013)



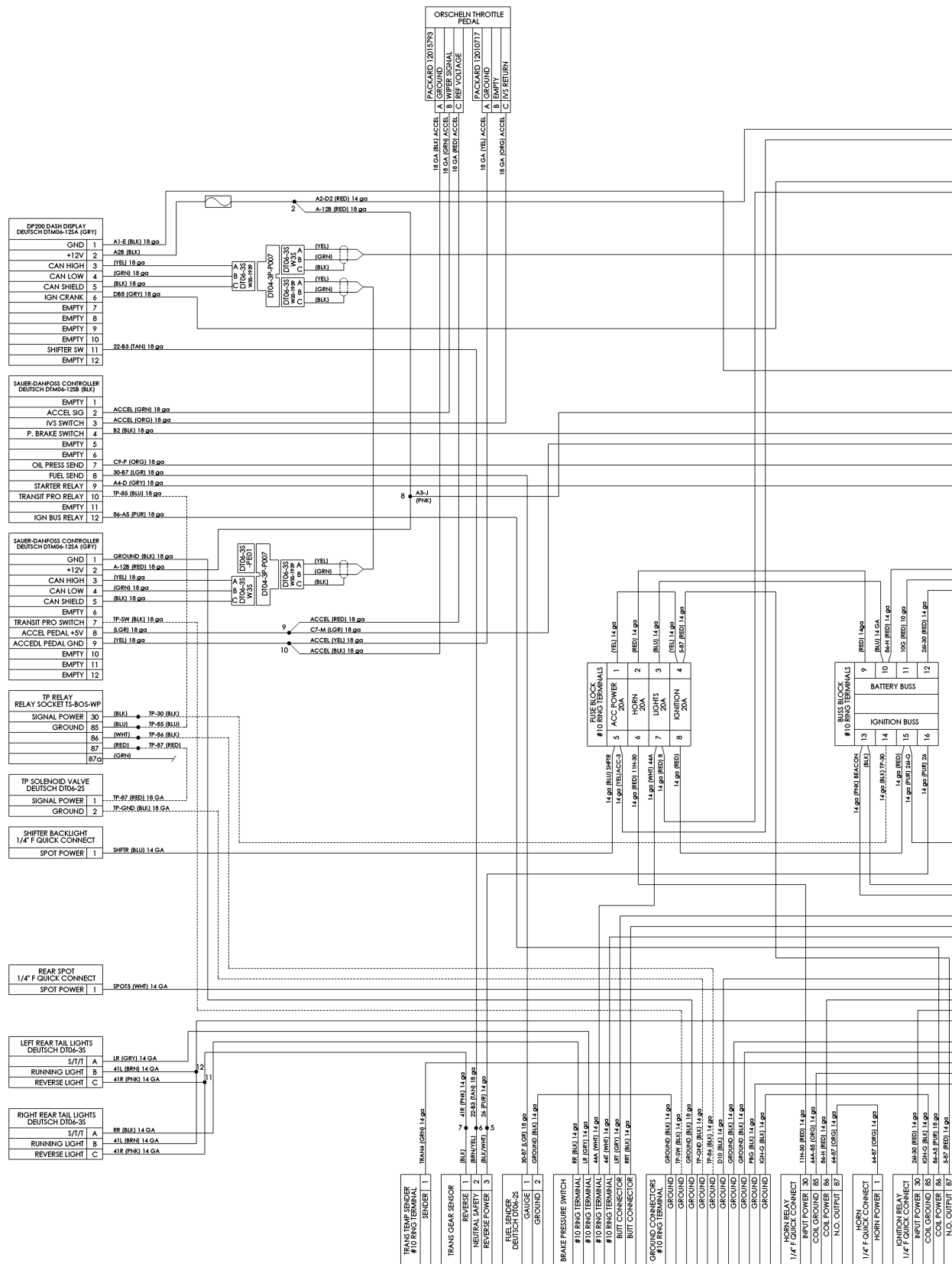
# ELECTRICAL SCHEMATICS

## VEHICLE WIRING HARNESS – YANMAR TIER III DIESEL (PRIOR TO 10/2013)



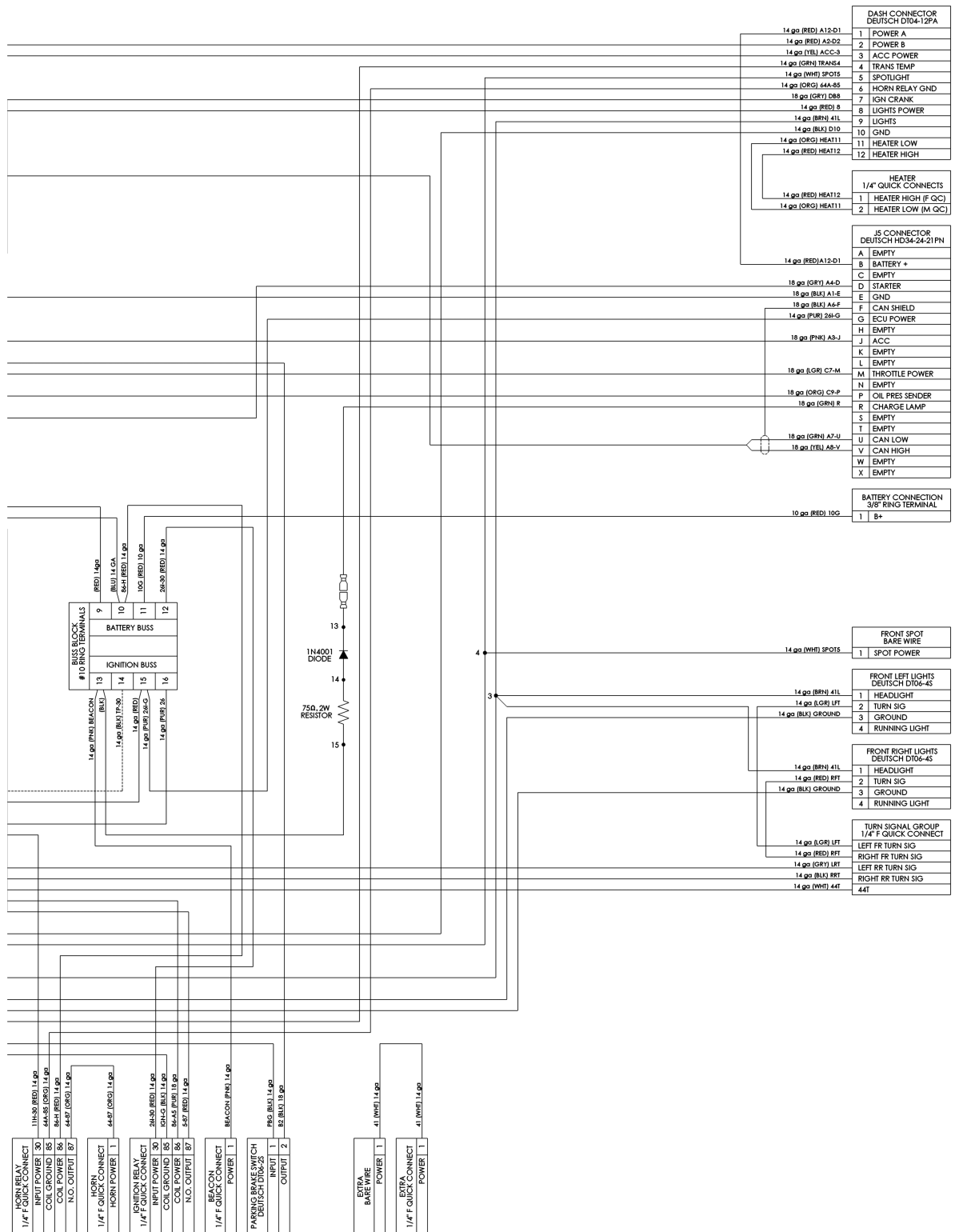
# ELECTRICAL SCHEMATICS

## VEHICLE WIRING HARNESS—YANMAR TIER III DIESEL (10/2013 THRU 9/2014)



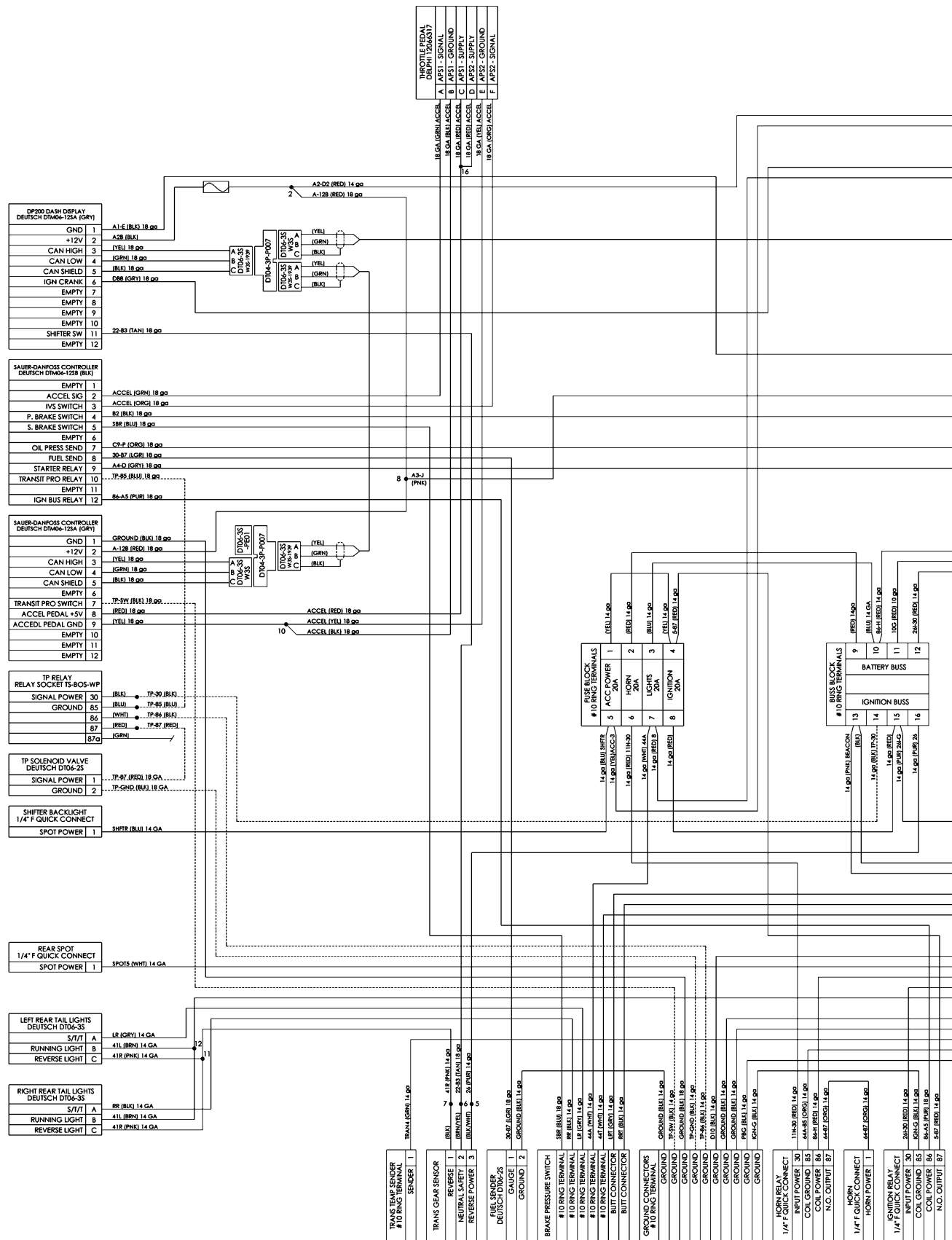
# ELECTRICAL SCHEMATICS

## VEHICLE WIRING HARNESS—YANMAR TIER III DIESEL (10/2013 THRU 9/2014)



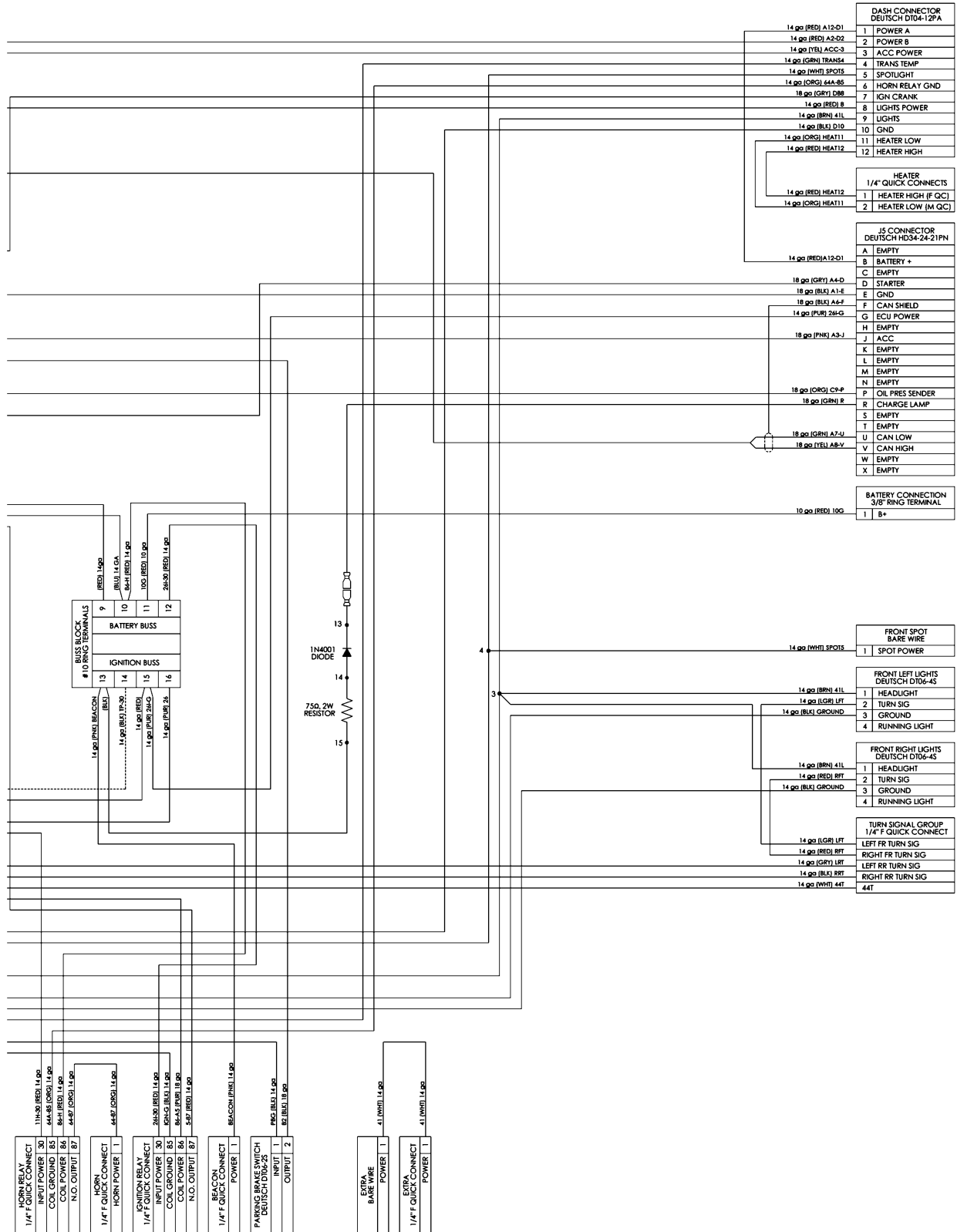
# ELECTRICAL SCHEMATICS

## VEHICLE WIRING HARNESS—YANMAR TIER III DIESEL (9/2014 AND LATER)



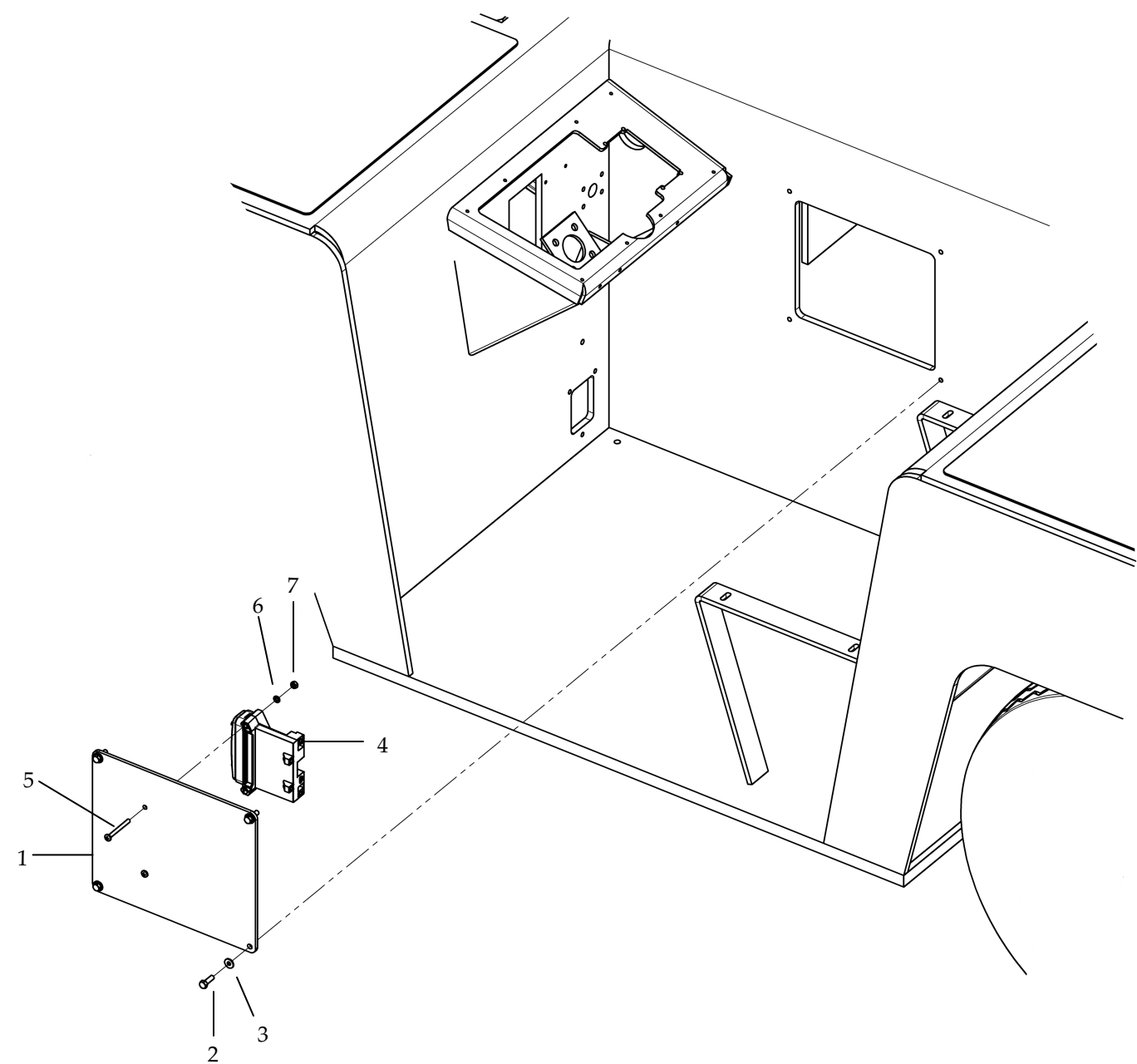
# ELECTRICAL SCHEMATICS

## VEHICLE WIRING HARNESS—YANMAR TIER III DIESEL (9/2014 AND LATER)



# ELECTRICAL SCHEMATICS

## VEHICLE LOGIC CONTROLLER - SAUER DANFOSS DISPLAY/CONTROLLER

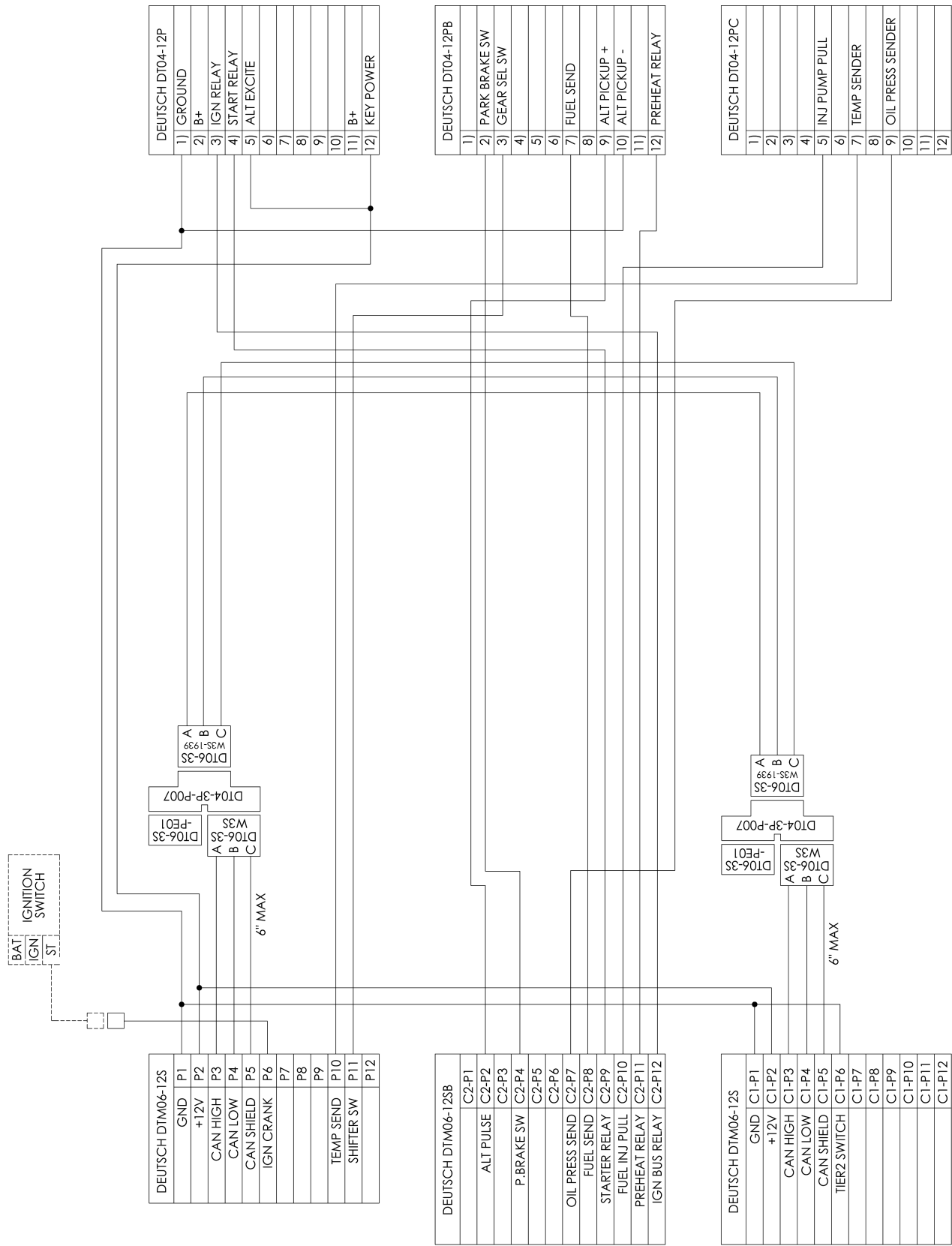


Item	Part Number	Qty	Description
1	A-TT10 DET3	1	ACCESS COVER PLATE
2	NPN	4	1/4-20 X 1 GR5 HCS
3	NPN	4	1/4 FLAT WASHER
4	A-TT8-00415-1	1	TT ELECTRONIC CONTROLLER
5	NPN	1	1/4-20 X 2 3/4 PAN HEAD MACHINE SCREW
6	NPN	2	1/4 SPRING LOCK WASHER
7	NPN	2	1/4-20 HEX NUT



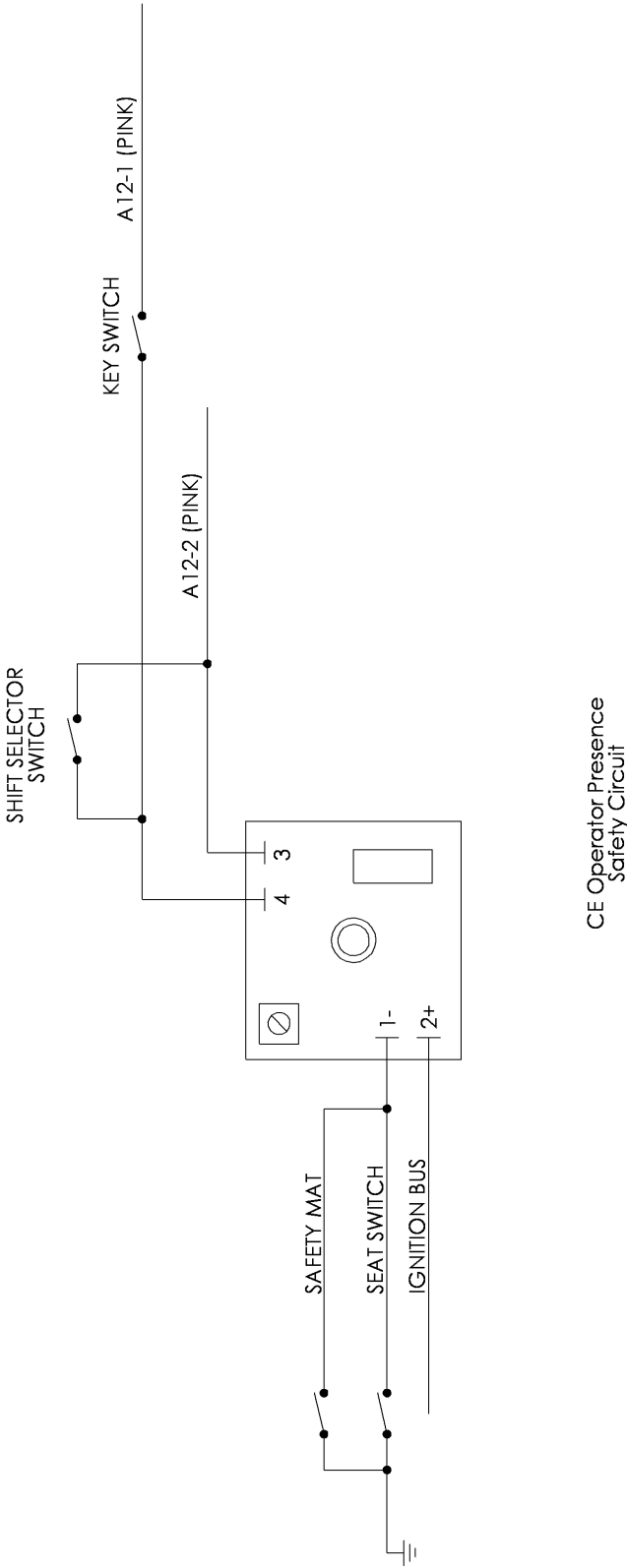
# ELECTRICAL SCHEMATICS

## VEHICLE LOGIC HARNESS—YANMAR TIER II DIESEL WITH SAUER DANFOSS CONTROLLER



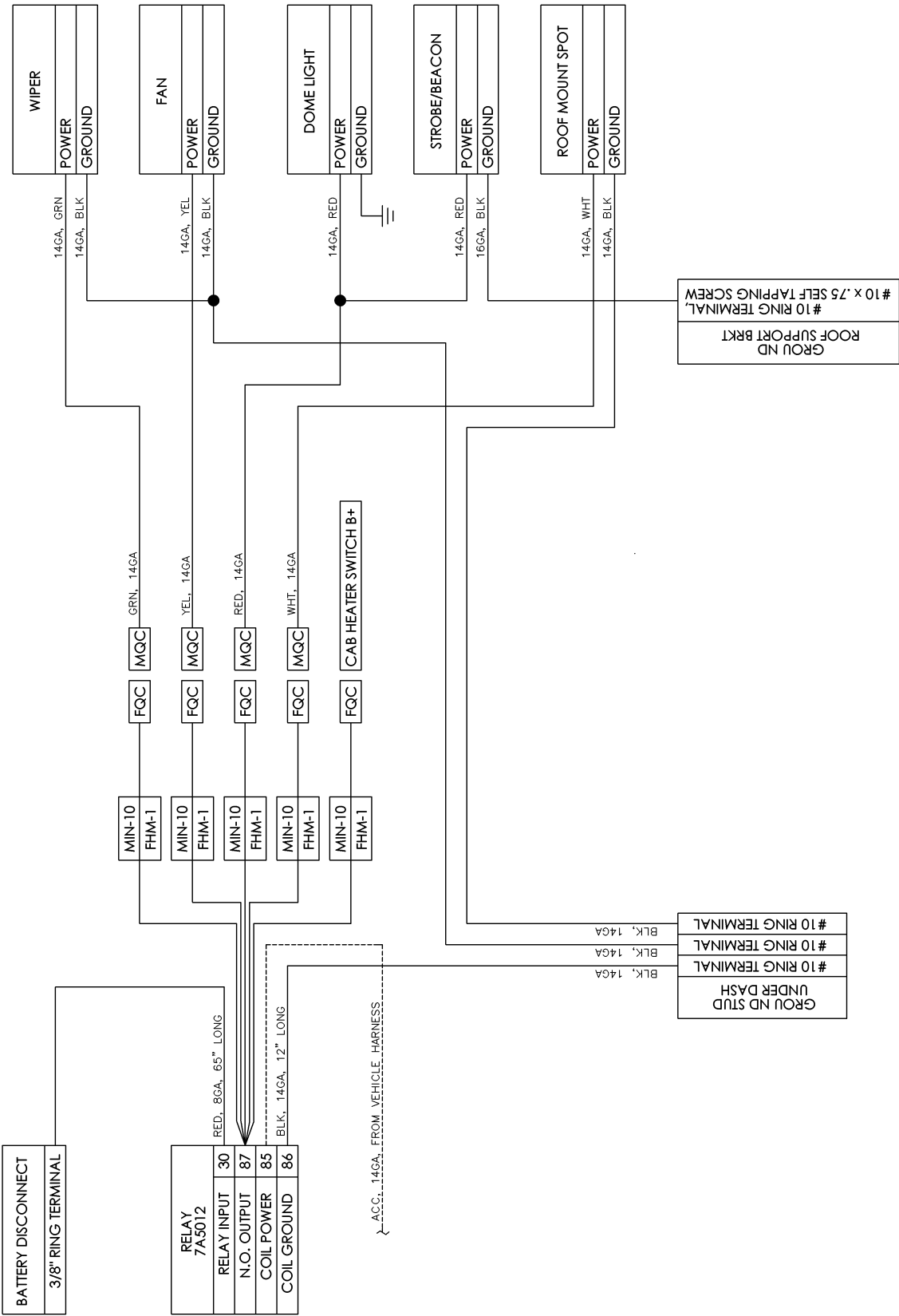
# ELECTRICAL SCHEMATICS

CE OPTION –OPERATOR PRESENCE CIRCUIT WIRING DIAGRAM



# ELECTRICAL SCHEMATICS

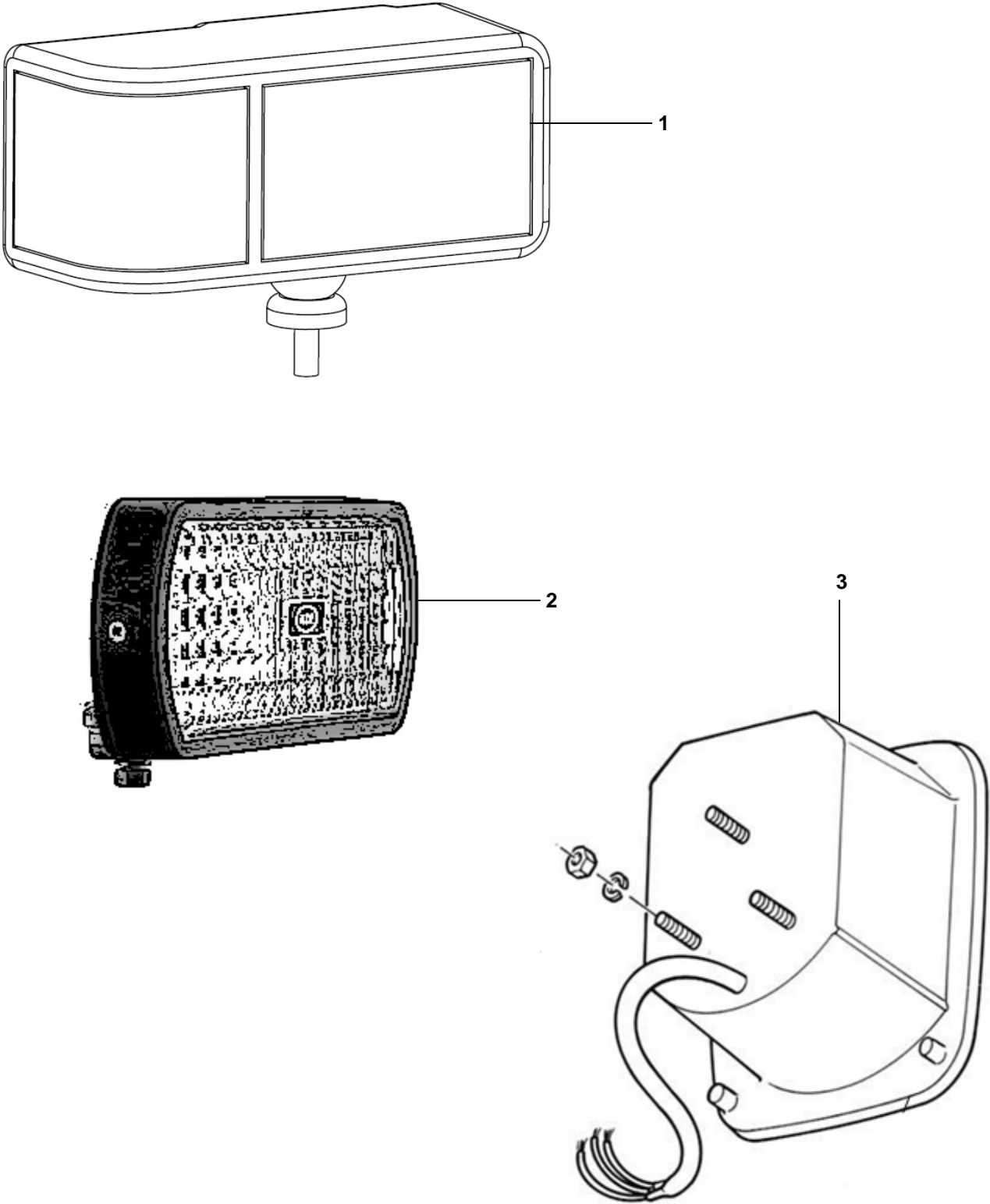
CAB OPTION WIRING DIAGRAM



# LIGHTS & ELECTRICAL

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## HEADLIGHT, TAILLIGHT & SPOTLIGHT ASSEMBLY



# LIGHTS & ELECTRICAL

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## HEADLIGHT, TAILLIGHT, SPOT LIGHT ASSEMBLY

Item	Part Number	Qty	Description
1	A-TT4-00291-6	2	HEADLIGHT W/ (OPTIONAL)TURN SIGNAL
2	A-TT4-00291-5	1	REAR FACING SPOT LIGHT (OPTION)
3	A-TT4-00292	2	TAILLIGHT

## TAILLIGHT ASSEMBLY REPLACEMENT PARTS

Item	Part Number	Qty	Description
4	73-1912	2	TAIL LENS COVER
5	1157	2	REPLACEMENT BRAKE LIGHT BULB
6	1156	2	REPLACEMENT REVERSE LIGHT BULB

## HEADLIGHT & SPOTLIGHT REPLACEMENT PARTS

Item	Part Number	Qty	Description
7	H6545	2	REPLACEMENT HEADLIGHT SEALED BEAM
8	1157	2	REPLACEMENT TURN SIGNAL BULB
9	H3	1	REPLACEMENT BULB, SPOTLIGHT

## OPTIONS NOT SHOWN

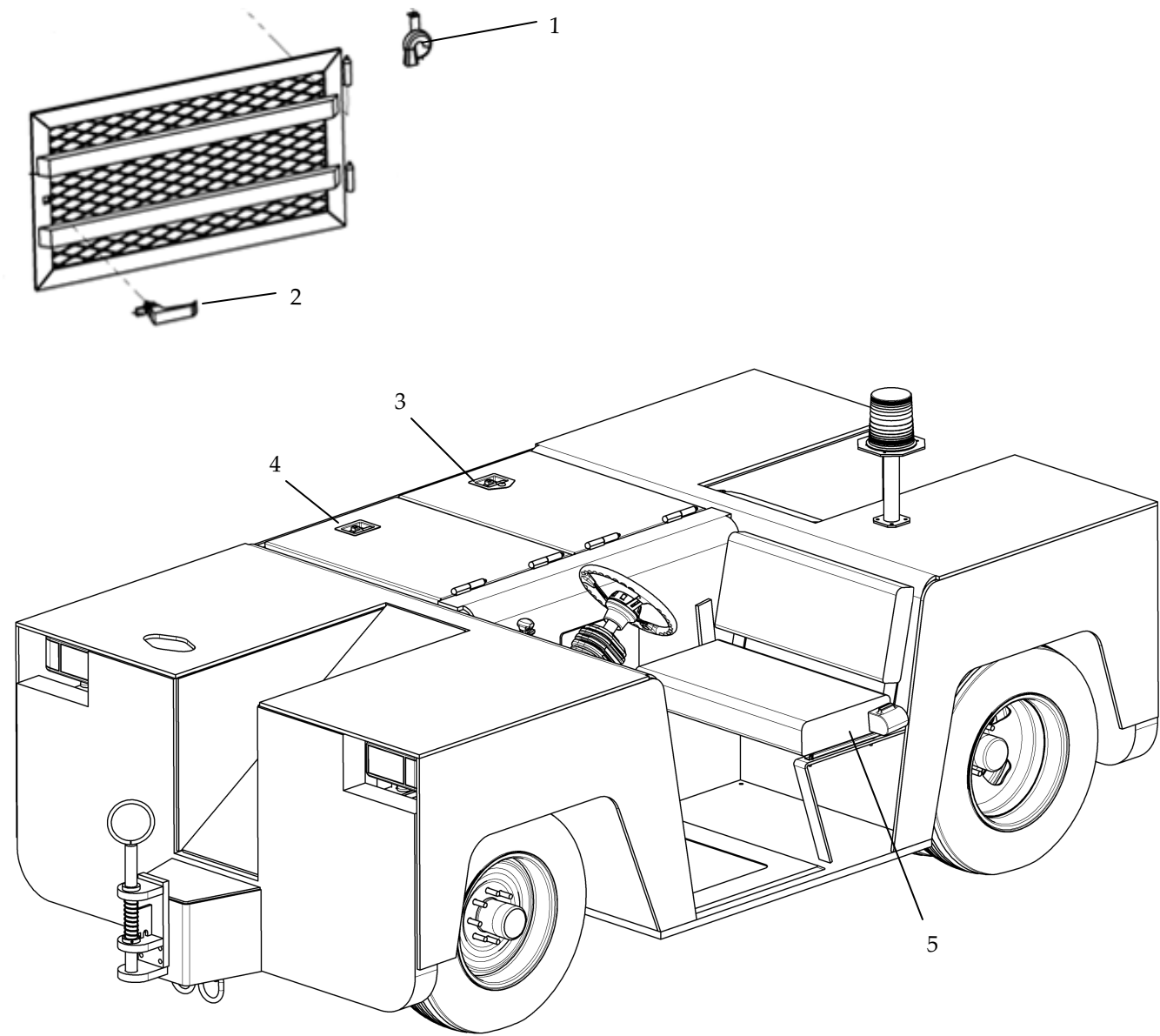
Item	Part Number	Qty	Description
10	AE-OPT-0076	2	ROOF MOUNTED TURN SIGNAL LAMP
11	AE-OPT-0099A	1	MASTER BATTERY DISCONNECT SWITCH PLOCKOUT LEVER KIT (OPTION)

## BATTERY DISCONNECT & FUSES

12	AE-OPT-0099	1	MASTER BATTERY DISCONNECT SWITCH
13	NPN	4	25 AMP ACG GLASS ROUND FUSE

# OTHER ASSEMBLY

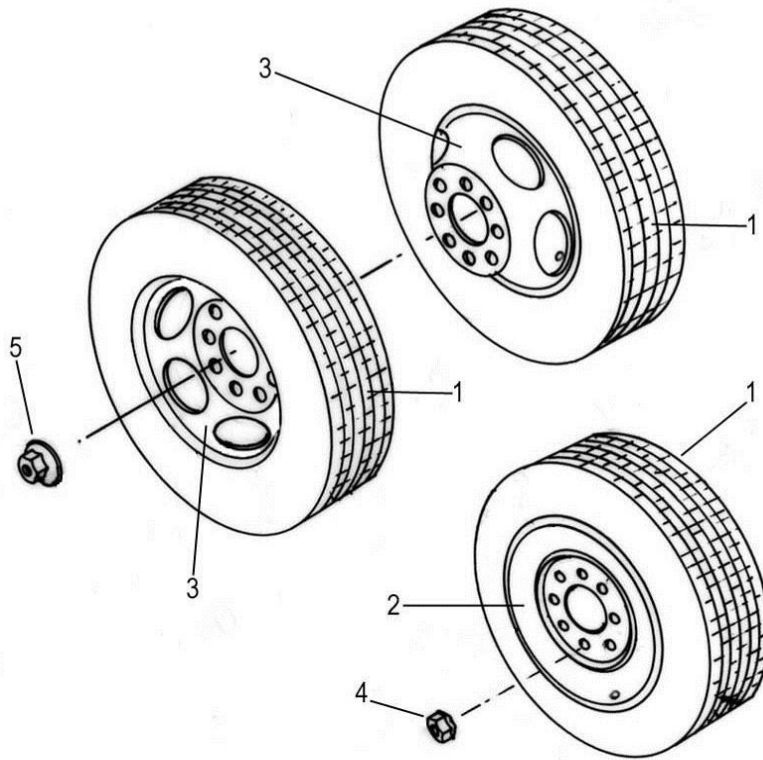
## BODY & SEAT ASSEMBLY



Item	Part Number	Qty	Description
1	A-TT4-0052	1	HORN ASSEMBLY
2	62-10-603-20	1	LATCH FOR ACCESS DOOR
3	C-TT4-0012-3	1	LOCKING T-HANDLE LATCH
4	C-TT4-0012-2	1	HOOD LATCH T-HANDLE
5	A-TT10-00048	1	BENCH SEAT STANDARD
6	AE-OPT-0055-B	1	BENCH SEAT BOTTOM CUSHION STANDARD
7	AE-OPT-0055-C	1	BENCH SEAT BACK CUSHION STANDARD
8	AE-OPT-0183	1	BENCH SEAT WITH KILL SWITCH (OPTION)

# OTHER ASSEMBLY

## TIRE AND RIM OPTIONS



Item	Part Number	Qty	Description
1	A-TT10-00121	6	STANDARD 16.5 IN TIRE
2	A-TT10-00122	2	STANDARD 16.5 IN RIM-FRONT
3	A-TT10-00125	4	STANDARD 16.5 IN RIM-REAR
4	A-TT10-00123	16	WHEEL LUG NUT
5	A-TT10-00126	16	WHEEL LUG NUT
6	AE-OPT-0077-1		OPTIONAL ALL SEASON MUD & SNOW TIRE REQUIRES OPTIONAL 16 IN RIM
7	A-TT4-00122-1		OPTIONAL FRONT 16 IN RIM FOR AE-OPT-0077-1
8	A-TT8/2-00126		OPTIONAL REAR 16 IN RIM FOR AE-OPT-0077-1
9	AE-OPT-0181-1		OPTIONAL FRONT ALUMINUM 16 IN RIM
10	AE-OPT-0181-4		OPTIONAL REAR ALUMINUM 16 IN RIM
11	AE-OPT-0181-3		OPTIONAL TIRE FOR ALUMINUM RIM
12	AE-OPT-0058-1		OPTIONAL SNOW CABLES

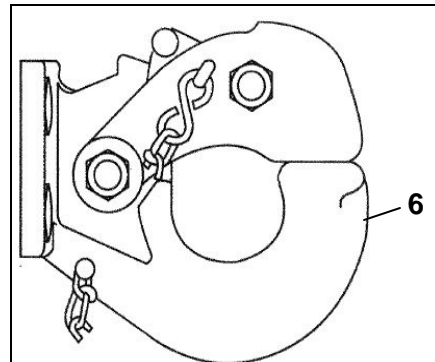
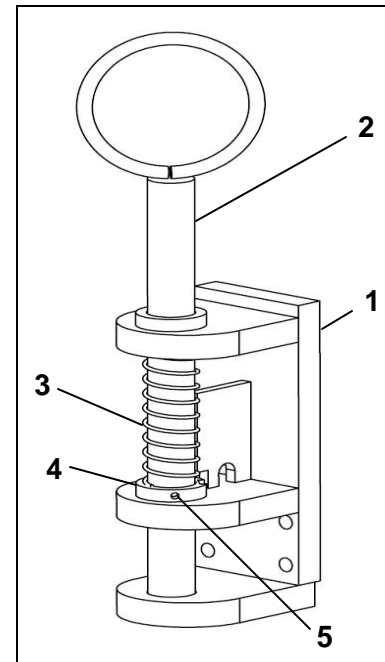
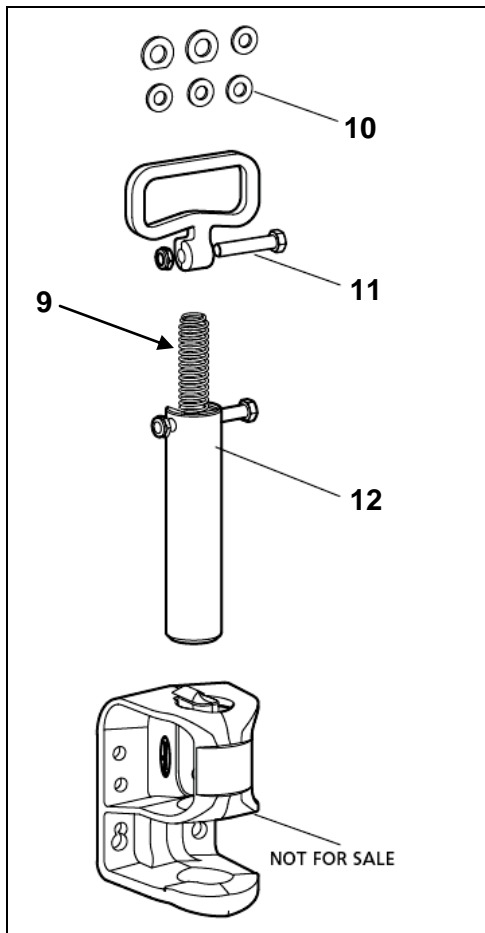
Lug Nut Torque Spec

Front 130 FT LBS

Rear 140 FT LBS

# OPTIONS

## HITCH OPTIONS



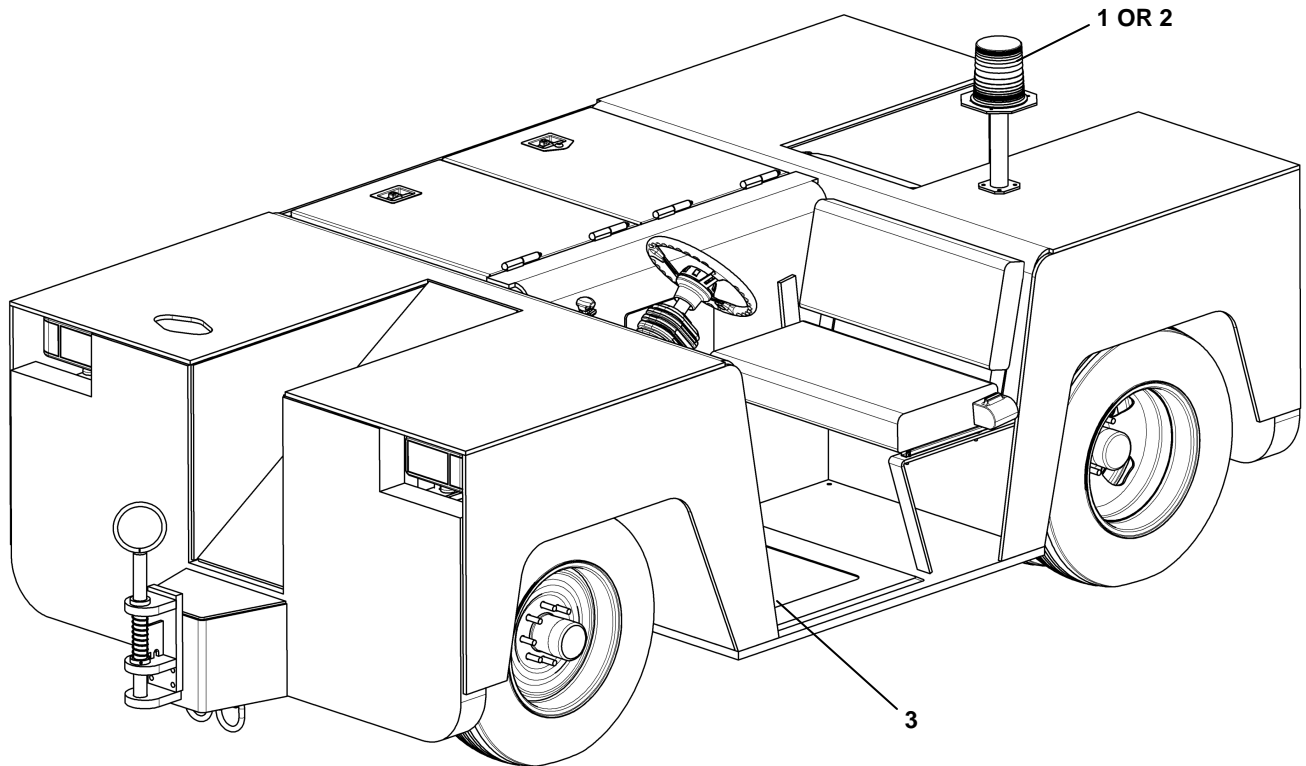
Item	Part Number	Qty	Description
1	AE-OPT-0033	1	E-HITCH 1 1/2 " PIN-COMplete ASSEMBLY
2	B-TT3-0008 DET2	1	E-HITCH GUIDE 1 1/2" GUIDE PIN WITH RING
3	B-TT3-0008A	1	E-HITCH SPRING
4	B-TT3-0008 DET5	1	LOCKING COLLAR
5	B-TT3-0008B	1	ROLL PIN
6	AE-OPT-0028	1	PINTLE HOOK
7	AE-OPT-0026	1	AIRLINE HITCH 3" PIN WITH CABLE (NOT SHOWN)
8	AE-OPT-0093	1	AIRLINE HITCH 2 3/8" PIN (NOT SHOWN)
9	AE-OPT-0033-1	1	HOLLAND HITCH
10	RK-11438	1	WASHER SET HOLLAND HITCH
11	RK-11440	1	HANDLE KIT HOLLAND HITCH
12	RK-11439	1	PIN & SPRING KIT HOLLAND HITCH

\* The above are standard hitch options. Please call for special hitch options information



# OPTIONS

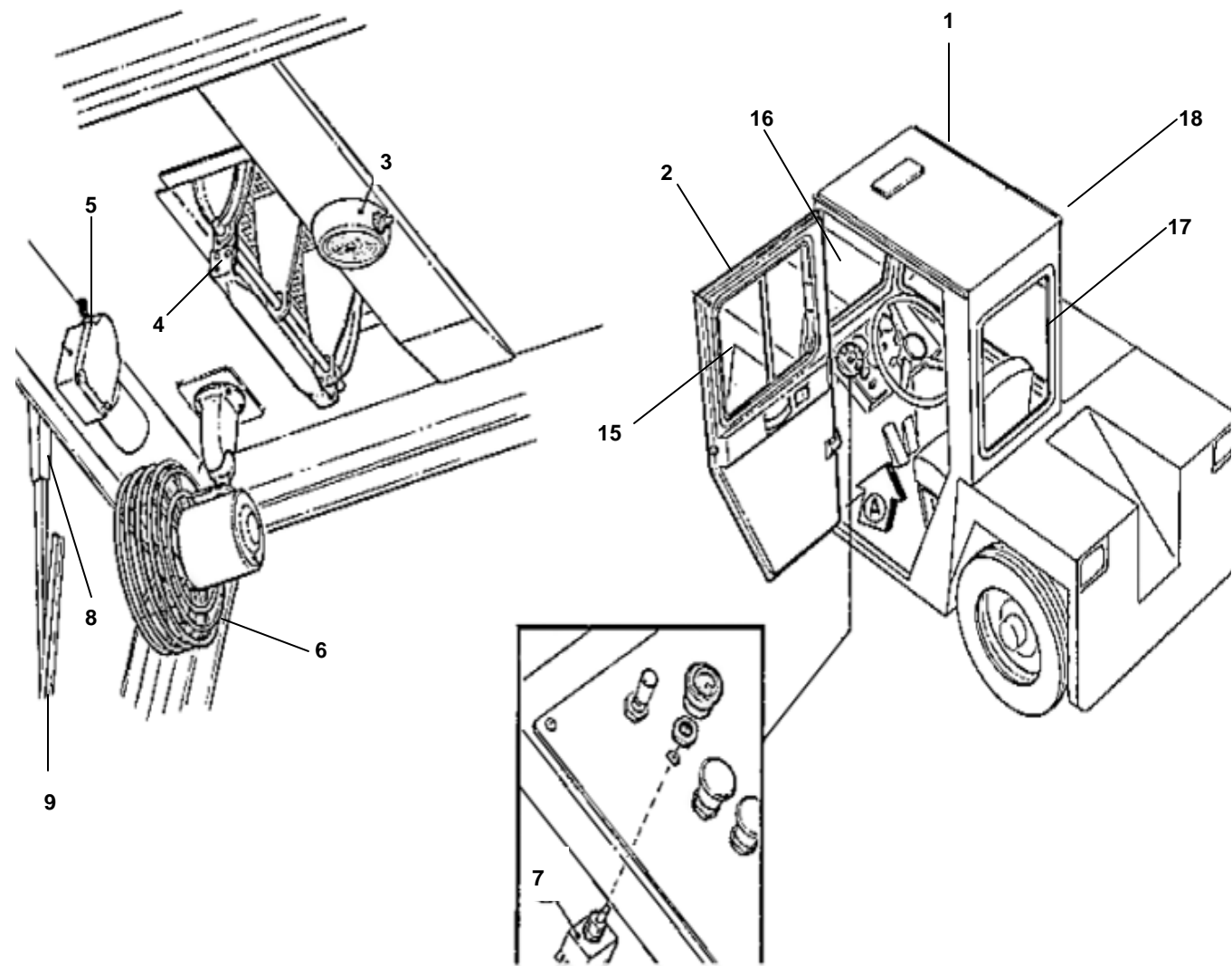
## STROBE, BEACON & FLOOR MAT OPTIONS



Item	Part Number	Qty	Description
1	AE-OPT-0002	1	AMBER ROTATING BEACON
1A	R5024BH	1	REPLACEMENT BULB 24VDC
1B	R5012BH	1	REPLACEMENT BULB 12VDC
2	AE-OPT-0007	1	STROBE
2A	129	1	REPLACEMENT BULB FOR STROBE
2B	AE-OPT-0009	1	1/2 COVER FOR STROBE
3	A-TT10-00450	1	BASIC FLOOR MAT(NO SENSOR)
3A	A-TT10-00450-1	1	OPERATOR SWITCH MAT (WITH SENSOR)
3B	A-TT10-00451	1	SWITCHMAT DELAY TIMER

# OPTIONS

## CAB OPTION



# OPTIONS

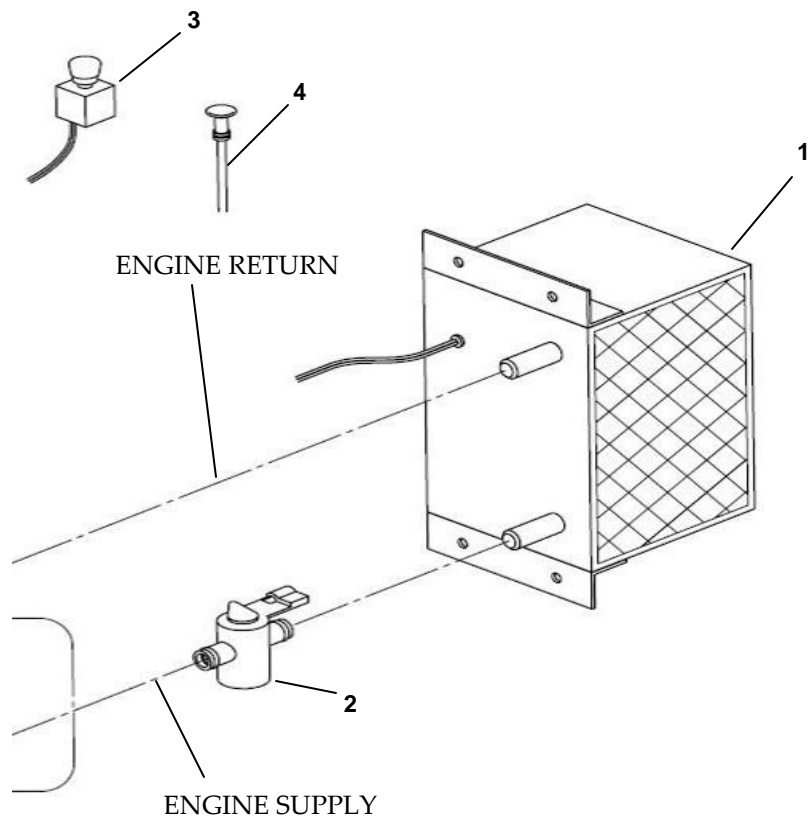
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## CAB OPTION

Item	Part Number	Qty	Description
1	AE-OPT-0083	1	CAB ASSEMBLY COMPLETE
2	414001	1	DOOR ASSEMBLY COMPLETE
3	A-TT4-00553	1	DOME LITE
4	A-TT4-00554	1	ROOF VENT
5	A-TT4-00555	1	WIPER MOTOR
6	A-TT4-00556	1	DEFROST FAN
7	A-TT4-00609	1	HEATER FAN SWITCH
8	991528	1	WIPER ARM
9	994890	1	WIPER BLADE
10	40516	3	DOOR HINGE
11	40515	1	STRIKER PLATE
12	48717	1	INSIDE DOOR HANDLE
13	990237	1	OUTSIDE DOOR HANDLE
14	49075	2	DOOR STRAP
15	994884	1	DOOR WINDOW
16	994883	1	WINDSHEILD
17	994882	1	REAR WINDOW
18	991809	1	SLIDING WINDOW
19	1003	1	DOME LITE BULB

# OPTIONS

## CAB HEATER



Item	Part Number	Qty	Description
1	A-TT4-00601	1	HEATER ASSEMBLY
2	A-TT4-00607D	1	CONTROL VALVE
3	A-TT4-00609	1	HEATER FAN SWITCH
4	A-TT4-00608	1	TEMPERATURE CONTROL CABLE
5	NPN	2	5/8 HEATER HOSE (NOT SHOWN)

# OPTIONS

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OTHER OPTIONS LISTED NOT SHOWN

Item	Part Number	Qty	Description
1	AE-OPT-0001	1	BACK UP ALARM
2	AE-OPT-0086	1	INTERCOM JACK
3	AE-OPT-0094	1	12V ACCESSORY OUTLET
4	AE-OPT-0114	1	RUBBER DECKING KIT TT12

# MAINTENANCE

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## DAILY OPERATOR RESPONSIBILITIES

### Proper Fluid Checks

#### Engine Oil

Check engine oil with the unit on a level surface, the key in the "OFF" position, the shifter position in "PARK" and parking brake applied. Open side access door. Remove dipstick from crankcase, wipe it with a cloth. Insert it fully and take out it gently again. Check the oil level by the marks on the dipstick. The oil level must be between the "Max" level and the "Min" level. DO NOT OVERFILL!

#### Coolant

DO NOT remove recovery tank cap or check coolant level while engine is hot! With engine cool, the key in the "OFF" position, the shifter position in "PARK" and the parking brake applied, open hood, set hood prop and look at left side of recovery tank. The reservoir tank is translucent, so the fluid is readily visible without removing the cap. Fluid level should be at the "Cold fill level".

#### Transmission Fluid

With unit in park and parking brake set in the "ON" position, start engine. Open side access door. Remove dipstick from transmission case, wipe it with a cloth. Insert it fully and take it out gently again. Check the fluid level by the marks on the dipstick. The transmission fluid level must be between the "Max" level and the "Min" level on the dipstick. DO NOT OVERFILL.

#### Brake Fluid

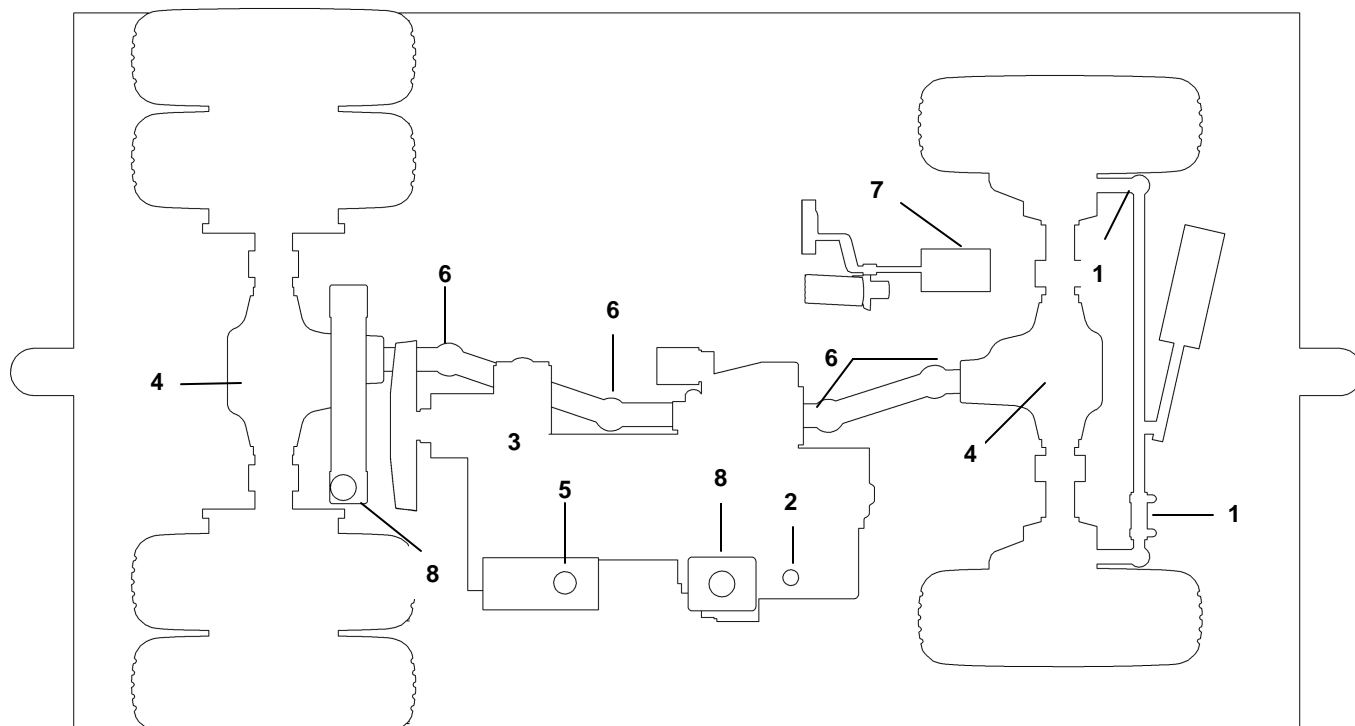
Check brake fluid with the unit on a level surface, the key in the "OFF" position, the shifter position in "PARK" and parking brake applied. Open hood, set hood prop and locate master cylinder reservoir. Remove spring clips and take off lid. Brake fluid level should be at the top of reservoir.

#### Power Steering Fluid

Check power steering fluid with key in "OFF" position, the shifter position in "PARK" and the parking brake applied. Open hood, set hood prop remove cap from power steering reservoir. Fluid level should be between the arrows on the indicator stick. DO NOT OVERFILL.

# MAINTENANCE

## LUBRICATION CHART



Item	Identification	Service	Lubricant
1	STEERING LINKAGE	LUBE	EP MULTIPURPOSE GREASE
2	TRANSMISSION OIL	CHECK	DEXTRON III TYPE TRANSMISSION FLUID
3	ENGINE OIL	CHANGE	15W40 CDOE/HDO (MIL-L-2104)
4	DRIVE AXLES	CHECK	80-90 GEAR OIL (MIL-L-2105)
5	POWER STEERING RESERVOIR	CHECK	AUTOMOTIVE POWER STEERING FLUID
6	DRIVE SHAFT	LUBE	EP MULTIPURPOSE GREASE
7	BRAKE MASTER CYLINDER	CHECK	DOT 3 BRAKE FLUID
8	ENGINE COOLANT	CHECK	ETHYLENE GLYCOL/ WATER (50/50 MIX) MIL-A-46153
9	ACCELERATOR CABLE	LUBE	**SUMMER MONTHS WD40 PENETRATING OIL WINTER MONTHS ANTI FREEZE
*CHECK WHEN ENGINE IS AT OPERATING TEMPERATURE			
**IT IS RECOMMENDED BY MANUFACTURER TO PROLONG THE LIFE OF YOUR ACCELERATOR CABLE THAT THE ABOVE LUBRICATION BE FOLLOWED			

# MAINTENANCE

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RECOMMENDED FILTER GUIDE

Part Number	Filter Description
129150-35153	Oil Filter
123907-55801	Fuel Filter
129242-55730	Fuel/Water Separator Filter
Fleetguard FS20000	Lubricity Filter
Donaldson P601437	Air Filter
Wix 58705	Transmission Filter and Gasket
SF-6520	Power Steering Filter

\*See Steering Fluid and Fill Procedure.



# MAINTENANCE

## PREVENTIVE MAINTENANCE SCHEDULE

	Preventive Maintenance Item Any items found to be deficient during the preventive maintenance review should be repaired or replaced. All fluids found low should be topped off.	Daily	First 50 hours	Every 250 hours	Every 500 hours	Every 1000 hours or annually †
	Perform daily pre-operation checklist (see Operations Manual)	X				
Engine Oil	Change engine oil and replace filter		X	X		
Transmission Oil	Change transmission fluid and replace filter					X
Steering	Change power steering fluid and replace filter					X
	Inspect steering linkage and grease ball joints					X
	Inspect and grease front axle					X
Cooling System	Check coolant level			X		
	Flush coolant					X
	Check and clean radiator fins			X		
	Inspect coolant hoses			X		
	Adjust tension of belts			X		
	Inspect belts			X		
Fuel System	Inspect fuel system for leaks			X		
	Replace fuel filter				X	
	Drain fuel/water separator	X				
	Clean fuel/water separator			X		
	Replace lubricity filter (if equipped)			X		
Air Cleaner	Inspect/replace air cleaner element			X		
Engine Compartment	Lap intake/exhaust valve seats (Contact engine service provider)					X
	Adjust intake/exhaust valve clearance (Contact engine service provider)					X
	Inspect and clean crankcase breather					X
	Inspect, clean, and check injection nozzles					X
Electrical	Inspect electrical wires and connections					X
	Inspect battery cables					X
Throttle	Inspect throttle cable assembly (Tier II only)					X
Brake System	Check brake fluid level			X		
	Inspect/replace front brake pads/rotors					X
	Inspect/replace rear drum brake shoes/linings					X
	Inspect brake lines and hoses					X
Suspension	Re-torque suspension u-bolts, 80 ft-lbs		X			
	Inspect axle shaft u-joints					X
	Grease driveshaft u-joints					X
	Re-torque spindle nuts, 40 ft-lbs					X
Tires	Rotate tires				X	
	Re-torque lug nuts, 150 ft-lbs					X

† Whichever time period is shorter.

# MAINTENANCE

## TT10-12 DIESEL SPECIFICATIONS & CAPACITIES

MODEL #	YANMAR 4TNV98T	
DESCRIPTION:	Vertical In-line diesel, 3.3 Liter, four cylinder, direct injection engine	
# OF CYLINDERS	4 IN-LINE	
BORE & STROKE INCHES (mm)	3.858 X 4.3307 in (98 X 110 mm)	
DISPLACEMENT, CUBIC INCHES (L)	202, 502 cu in (3.319L)	
COMPRESSION RATIO	18.1	
FUEL	No 2 DIESEL	
ALTERNATOR	40 AMP, 12 VOLT, NEG GROUND	
ENGINE WEIGHT FULLY DRESSED LB (KG) (PROX)	568 (258)	

### BATTERY

Group 65 , 860 Cold Cranking Amps automotive battery

### ENGINE CRANKCASE CAPACITIES

ENGINE	U.S. QUARTS	IMPERIAL QUARTS	LITRES
3.3 L ( DIESEL ***	11.1	9.24	10.5
OIL TYPE SAE 15W40CD *ONLY USE OIL THAT IS RATED FOR A DIESEL ENGINE			

### FUEL TANK REFILL CAPACITIES

U.S. GALLONS	IMPERIAL GALLONS	LITERS
18.0	15.008	68.22
USA -SAE (SOCIETY OF AUTOMOTIVE ENGINEERS) NO. 2-D, NO. 1-D, ASTM.D975-94 JAPAN- JIS K2204 GRADE NO 2 EUROPEAN UNION- EN590:96 INTERNATIONAL ISO 8217 DMX UNITED KINGDOM- BS 2869-AL OR A2 KOREA- KSM-2610 CHINA- GB252 *Please refer to Yanmar Engine Instruction Manual for further information		

# MAINTENANCE

## TT10-12 DIESEL SPECIFICATIONS & CAPACITIES

### TRANSMISSION REFILL CAPACITIES

ENGINE	U.S. PINTS	IMPERIAL PINTS	LITRES
3.3 L DIESEL	8.00	6.60	3.80
* USE DEXTRON III TYPE TRANSMISSION FLUID OR EQUIVALENT			
**ADD 9 PINTS, 7.5 IMPERIAL PINTS OR 4.25 LITERS IF TORQUE CONVERTOR HAS BEEN DRAINED			

### ENGINE COOLING SYSTEM REFILL CAPACITIES

ENGINE	U.S. QUARTS	IMPERIAL QUARTS	LITRES
3.3 L DIESEL	16.00	13.30	15.10
* A 50/50 MIXTURE OF GLYCOL AND CLEAN WATER			

### BRAKE SYSTEM

The brake system is power assisted hydraulic, front disc type and rear drum type. USE DOT 3 BRAKE FLUID.

### STEERING FLUID AND FILL PROCEDURE

The steering system is power assisted hydrostatic type. Power Steering Fluid Equivalent Spec For GM 9985010, CHRYSLER MS-5931 or FORD ESW-M2C128-C AND D OR 10 Weight Mineral Oil may be used.

If the system has been drained for repair or scheduled maintenance, fill steering reservoir to within 2" of maximum fill level. With the key in the OFF position, turn the engine over for 30 seconds using a remote start device to ensure safety. While engaging the remote starter, turn the steering wheel from stop to stop and apply the service brakes. After 30 seconds of engagement, the fluid level will drop, allowing for refilling. Repeat this process for a total of three cycles. Top off power steering fluid to within 2" of top of reservoir or to the center of the sight glass (if applicable). Return to service.

### AXLE REFILL CAPACITIES

AXLE	U.S. PINTS	IMPERIAL PINTS	LITRES
FRONT STEER – NON DRIVE	N/A	N/A	N/A
FRONT DRIVE AXLE	5.20	4.37	2.48
REAR DRIVE AXLE	8.50	7.00	3.75
* SERVICE REFILL CAPACITIES ARE DETERMINED BY FILLING TO THE BOTTOM OF THE FILLER HOLE			
**USE 80W90 HYPOID GEAR LUBRICANT			

# MAINTENANCE

YANMAR ENGINE TROUBLE SHOOTING		
SYMPTOM	PROBABLE CAUSE	ACTION
<b>Indicator Turns On-Engine Running</b>		
Engine Coolant Indicator	Low engine Coolant	Add engine coolant
	Dirty radiator fins	Clean the radiator fins
	Engine coolant leaking	See authorized Yanmar industrial engine dealer or distributor
	V-belt loose or damaged	Adjust V-belt or replace
	Contaminated engine coolant	See authorized Yanmar industrial engine dealer or distributor
	Faulty engine coolant pump	
Battery Indicator	V-belt loose or damaged	Adjust V-belt or replace
	Battery failure	Check battery condition
	Faulty alternator	See authorized Yanmar industrial engine dealer or distributor
<b>Indicator Does Not Turn ON-Key Switch is Turned to ON(OFF-ON) Engine Not Running</b>		
	Faulty electrical wiring or faulty indicator	See authorized Yanmar industrial engine dealer or distributor
<b>Indicator Stays On-Key Switch is Turned from Start to On(START-ON)-Engine Not Running</b>		
Battery Indicator stays ON	Faulty alternator	See authorized Yanmar industrial engine dealer or distributor
Engine oil pressure indicator stays ON	Faulty engine oil pressure switch	see authorized Yanmar industrial engine dealer
	No or low level of engine oil	Check and adjust oil level as necessary
	Clogged engine oil filler	Replace engine oil filter

# MAINTENANCE

YANMAR ENGINE TROUBLE SHOOTING		
SYMPTOM	PROBABLE CAUSE	ACTION
Engine Does Not Start		
Starter motor operates but engine does not start	No diesel fuel	Refuel and prime fuel system
	Air in fuel system	Prime fuel system
	Improper diesel fuel	Replace with recommended diesel fuel
	Clogged fuel filter	Replace fuel filter
	Poor fuel injection	See authorized Yanmar industrial engine dealer or distributor
	Compressed air leakage from intake/exhaust valves	
	Faulty engine stop solenoid	
	Starter motor does not operate or rotates too slowly(engine can be turned manually)	Battery needs charging
Faulty starter switch		Clean terminals, retighten
Faulty starter motor		See authorized Yanmar industrial engine dealer or distributor
Engine cannot be manually turned		
White or Black Exhaust Smoke		
Black exhaust smoke	Engine overload	Reduce load
	Clogged air cleaner element	Clean element or replace
	Improper diesel fuel	Replace with recommended diesel fuel
	Faulty spraying of fuel injection	See authorized Yanmar industrial engine dealer or distributor
	Excessive intake/exhaust valve clearance	
White exhaust smoke	Improper diesel fuel	Replace with recommended diesel fuel
	Faulty spray pattern of fuel injection	See authorized Yanmar industrial engine dealer or distributor
	Fuel injection timing delay	
	Engine burning oil	

# MAINTENANCE

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## Recommended TT 4-12 Tool List

### Screwdrivers

- a. Philips #1, #2 4" long
- b. Slotted 1/8 X 4, 3/16 X 4, 1/4 X 6, 5/16 X 8

### Torx

- a. T25, T27, T30, T40

### Nut Drivers

- a. 1/4", 5/16", 3/8"

### Allen Wrench

- a. 7/64, 1/8, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8

### Adjustable Wrench

- 8" & 10"

### 6) Metric Combination Wrenches

- a. 8MM, 10MM, 12MM, 13MM, 14MM, 15MM, 16MM, 17MM, 18MM, 19MM, 20MM, 21MM

### 7) Standard Combination Wrenches

- a. 1/4, 5/16, 11/32, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16,  
1 1/8

### 8) 3/8 Drive Deep Standard Sockets

- a. 3/8, 7/16, 1/2, 9/16

### 9) 1/2 Drive Deep Standard Sockets

- 9/16, 3/4, 15/16, 1 1/8

### 10) 3/8 Drive Standard Sockets

- 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4

### 11) 3/8 Drive Metric Sockets

- 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

### 12) 1/2 Drive Metric Sockets

- 16, 17, 18, 19, 20, 21, 22, 23, 24

### 13) 1/2 Drive Standard Sockets

- 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1 1/8

# MAINTENANCE

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- 14) Swivel Universal
  - 1/2, 3/8 Drives
- 15) Extension 3/8 Drive
  - 3, 6, 10 inch
- 16) Extension 1/2 Drive
  - 3, 6, 10 inch
- 17) OTC 7157
- 18) OTC 7080
- 19) OTC 1902
- 20) 12 volt test light
- 21) Torque Wrench
  - 25-250 Foot Pounds
- 22) 7 inch diagonal pliers
- 23) 8 inch long nose pliers
- 24) 6 3/4 inch slip joint pliers
- 25) 9 1/2 inch arc joint pliers
- 26) Multimeter
- 27) Pickle Fork
- 28) Snap wring pliers
- 29) Ball Pein Hammer 32 oz
- 30) Oil Filter wrench
  - 2 3/4 inch to 3 3/4 inch in diameter
- 31) Grease gun with 20" flex hose
- 32) Oil pan drain
- 33) Funnel

# MAINTENANCE

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## TIPS FOR INCREASED ALL WEATHER TRACTION DURING AIRCRAFT PUSHBACK

- 1.Reduce air pressure in pneumatic tires from 60 PSI to as low as 25 PSI. (\*\*restore air pressure to 60 psi as soon as weather emergency ends).
  - 2.When pushing with All Wheel Drive tractors, make sure the tow bar is level or slightly downhill toward tractor.
  - 3.When towing with Rear Wheel Drive-raise hitch height.
  - 4.When pushing with Rear Wheel Drive-lower hitch height.
- Note: These strategies(2, 3 and 4) maximize all weather traction.
- 5.When pushing aircraft on ice or icy snow with All Wheel Drive, a wheel may loose traction (wheel spin). To stop front wheel spin, apply some service brake gradually with left foot until wheel spin stops and hold, while continuing the pushback. Coordinate the left foot service brake pressure and the right foot accelerator, to maintain a smooth pushback. To stop rear wheel spin, apply parking brake with lever until it stops while continuing the pushback.
  - 6.On ice or snow use chains or cables. If the use of chains is prohibited, there are traction cables that serve the same function as chains but are much easier to mount and are very kind in terms of abrasion to all surfaces.
  - 7.Keep fuel tank full, as much as possible.
  - 8.Consult with Eagle Tugs factory for additional assistance.



# MAINTENANCE

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## FRONT END ALIGNMENT PROCEDURE

Find center line of tire front and back

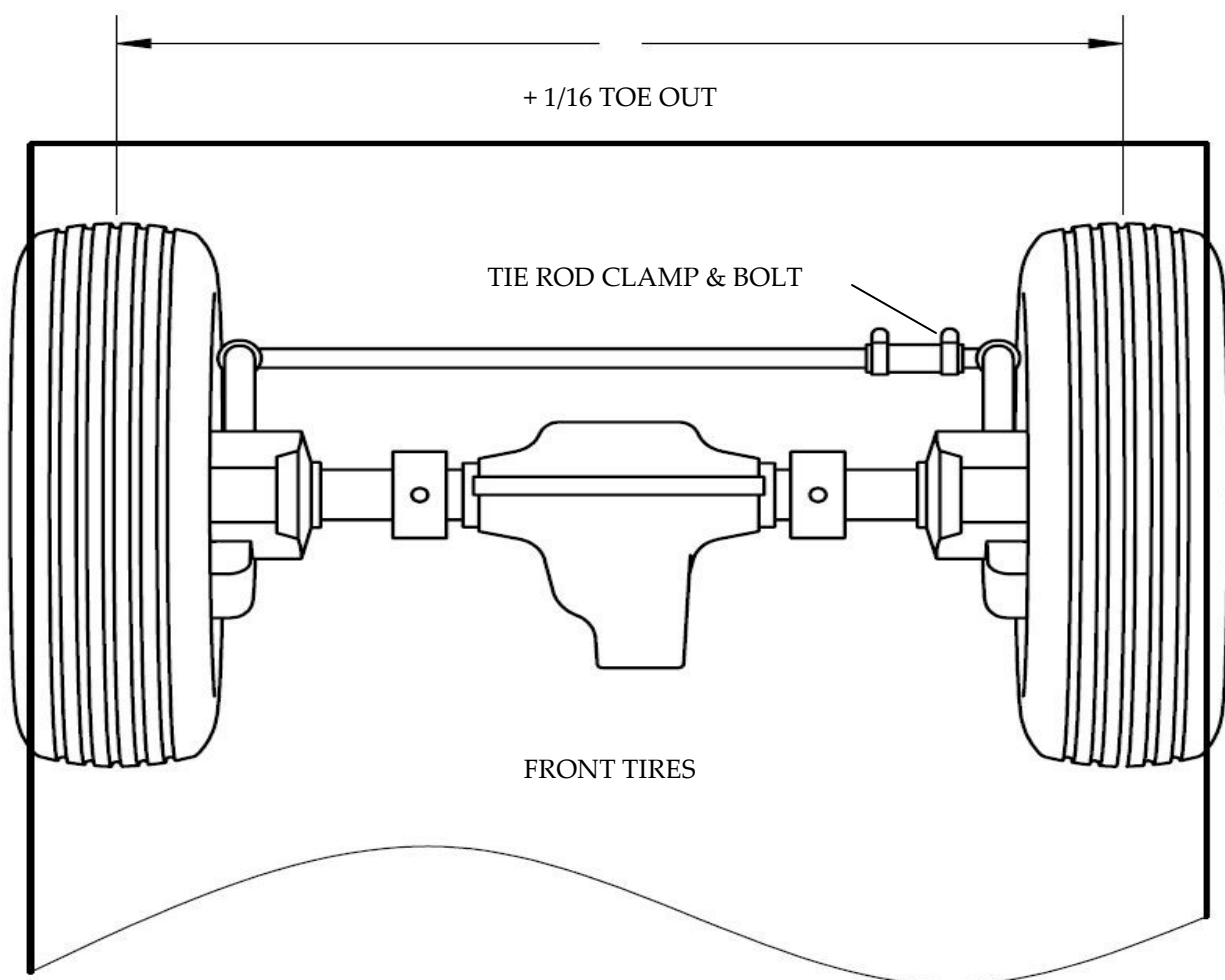
Check with tape measure to see difference

The front should be  $\frac{1}{16}$  inch more than the rear

$\frac{1}{16}$  inch toe out, if less or greater loosen the two bolts on the tie rod clamp

Turn clamp in or out to achieve desired setting— $\frac{1}{16}$  in toe out

Retighten two bolts on the tie rod clamp



# REVISION LOG

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Rev	Date	Description	Appr.
5	29-May-2013	Added information for single rear wheel axle option	PRB
6	29-Aug-2013	Replaced cab wiring schematic	SEB
7	26-Sep-2013	Modified upper radiator shroud and rear wheel part numbers	PRB
8	21-Oct-2013	Revised Tier III vehicle harness diagram for alternator excite circuit	PRB
9	30-Oct-2013	Added key switch and key switch bracket part numbers	PRB
10	19-Nov-2013	Removed Warranty Statement.	SEB
11	26-Feb-2014	A-TT4-00119 Nylon Washer obsoleted.	PRB
12	24-Jun-2014	Added dual-analog throttle pedal, added new power steering reservoir.	PRB
13	27-Jun-2014	Added details for lubricity filter to fuel system diagram.	SEB
14	21-Jul-2014	Added relay part numbers to Tier3 engine harness	PRB
15	08-Aug-2014	Updated throttle pedal part number	PRB
16	25-Aug-2014	Updated preventive maintenance schedule. Added H30 display/controller (obsolete) information for historical data. Updated engine thermostat part number. Relocated filter reference chart. Added historic throttle pedal replacement information. Corrected trans mount part number.	SEB
17	20-Oct-2014	Power steering reservoir superseded by new version, new schematic for dual-analog throttle pedal.	PRB
18	05-Nov-2014	Updated coolant overflow hose size/length	PRB
19	25-Nov-2011	Added brake linkage clevis washers	PRB
20	12-Jan-2015	Updated transmission for new housing type	PRB
21	20-Feb-2015	Updated Tier III vehicle wiring schematic	PRB
22	25-Feb-2015	Updated lubricity filter parts and fuel system diagram	DCM
23	14-Apr-2015	Added steering fluid fill procedure.	DCM